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Gleanings in Bee Culture



Sweet Clover, Basswood and Alfalfa Piled Up This Comb-honey Hive in Minnesota Last Summer.

VOL. XLVIII

November, 1920

NUMBER 11

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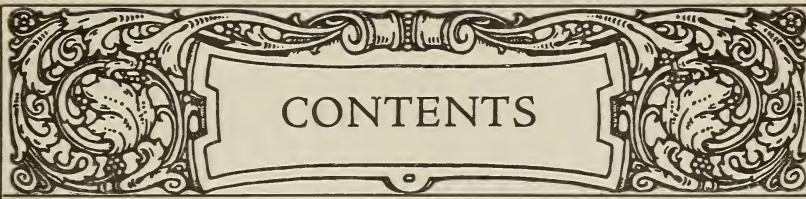
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HONEY

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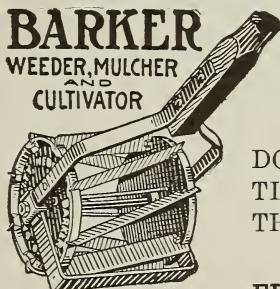
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HONEY MARKETS

The extracted honey market has not improved during the last month. It is generally dull and movement slow. Comb honey, of which there is very little, is in great demand and the price high. The quotations made by the Bureau of Markets and by producers as printed below best reflect present market conditions.

U. S. Government Market Reports.

SHIPPING POINT INFORMATION, OCT. 14.

LOS ANGELES, CALIF.—Light wire inquiry, demand and movement slow, market unsettled, little change in prices. Carloads f. o. b. usual terms, per lb., white orange blossom and white sage 18-20c, light amber sage 15-17c, light amber alfalfa 14-16c. Beeswax, 42c. Slump in sugar market slowing movement.

TELEGRAPHIC REPORTS FROM IMPORTANT MARKETS.

BOSTON.—Approximately 75 cases from New York, 75 cases from Vermont arrived since last report. Supplies light, demand and movement limited, market weak, few sales. Sales to jobbers, extracted, per gallon, Porto Rican, amber \$1.30. Comb: New York, 24-section cases white clover, No. 1, heavy, \$8.75, Vermont, 20-section cases white clover, No. 1, heavy, \$8.00. Beeswax: Liberal supplies of foreign stock, market weak. Per lb., domestic, light, 38-43. Imported, Porto Rican, light yellow 30-33c, Porto Rican and African dark 23-25c.

CHICAGO.—No carlot arrivals since last report. Supplies moderate, demand and movement moderate, market dull. Sales to jobbers, extracted, per lb., Colorados, Utahs, and Wisconsins, white alfalfa and white clover 18-19c, light amber alfalfa and clover 17-18c. Minnesotas and Ohios buckwheat, all grades 16-17c. Comb: Ohios and Colorados, alfalfa, 24-section cases, No. 1, \$7.00-7.50. Beeswax: Receipts moderate, demand and movement moderate, market steady. Oklahoma, Texas, and New Mexico, refined 38-40c, unrefined 33-35c.

CINCINNATI.—1 car Idaho, 1 car New Mexico, 1 car California arrived since last report. Supplies heavy, practically no demand or movement, market dull, no sales reported. Beeswax: Supplies light, demand and movement moderate, market steady. Sales to jobbers, per lb., average yellow 44-46c.

CLEVELAND.—No arrivals since Oct. 1. Supplies moderate, demand and movement very slow. Sales to jobbers, extracted, per lb., Colorados and Utahs, light amber alfalfa, 60-lb. tins 17-18c, white clover 18-19c. Beeswax: Supplies light, too few sales to establish market.

MINNEAPOLIS.—Supplies moderate, demand and movement slow, market dull. Sales direct to retailers, extracted, per lb., western, light amber alfalfa, 60-lb. cans 20c per lb. Comb: Colorado, No. 1, white alfalfa, 24-section cases \$8.00.

ST. PAUL.—Supplies very light, demand and movement slow, market dull. Sales direct to retailers, extracted, Minnesotas, white clover, 10-lb. cans 22c. Comb: Minnesotas, No. 1, white clover, 24-section cases \$7.25. Colorados, No. 1, white alfalfa \$8.00.

NEW YORK.—1 car New York arrived since last report. Supplies liberal, practically no demand or movement, market very weak and unsettled. Sales to jobbers and large wholesalers, extracted, domestic, per lb., California, light amber alfalfa 12-15c, light amber sage 14-17c, white orange blossom and white sage 16-18c. Imported, per gallon, West Indies and South American refined \$1.00-\$1.15, few \$1.25. Beeswax: No arrivals reported since Oct. 1. Supplies moderate, demand and movement very slow, market unsettled. Sales to jobbers and large wholesalers, imported, South American and West Indian crude, light 26-32c, mostly 28-30c; dark, wide range in prices, best 26-28c, poorer low as 19c.

PHILADELPHIA.—Approximately 24,000 lbs. from New York and 17,600 lbs. from Maryland arrived since last report. Demand and movement slow, market dull. Sales to jobbers, extracted, domestic, per lb., Florida, light amber 20c, fancy 21c. New Yorks, white clover 17c, southern white orange

blossom 16c. Imported, per gallon, Porto Rican, amber \$1.35-1.40, light amber, fine quality \$1.43-1.48.

KANSAS CITY.—1 car Nevada arrived since last report. Supplies moderate, demand and movement moderate, market dull. Sales to jobbers, extracted, per lb., Kansas white clover and light amber clover 17-18c. Comb: New stock, Nevada, 24-section cases, fancy light alfalfa \$7.50-7.75.

ST. LOUIS.—Supplies liberal, demand and movement good, market steady. Sales to jobbers, per lb., extracted, Arkansas and Mississippi, light amber clover, peach and various varieties, mixed in barrels 16c, in 5-gallon cans, best 18c. Combs: Few sales. Colorados, No. 1, light amber clover, 24-section cases \$7.00. Beeswax: Supplies light, demand and movement slow, market steady. Sales to jobbers, per lb., Mississippi, Illinois, Missouri, and Arkansas, prime yellow 31c.

GEORGE LIVINGSTON,
Chief of Bureau of Markets.

Special Foreign Quotations.

CUBA.—Honey is quoted at \$1.20 a gallon, and beeswax at 34c a pound.—A. Marzol.

Opinions of Producers.

Early in October we sent to actual honey-producers, scattered over the country, the following questions:

1. In your locality what part of the honey crop is already out of the hands of the producer? Is the honey crop moving readily?
2. At what wholesale price is honey selling in your State? Extracted honey? Comb honey?
3. At what retail price is honey selling in your State? Extracted honey? Comb honey?
4. How is the demand for honey at present in both wholesale and retail way?
5. For what prices are producers holding?

Answers, as condensed by the editor, are as follows:

BRITISH COLUMBIA.—At wholesale, extracted honey is selling at 30c, comb 42c per section. At retail, extracted 50c in pound jars, \$1.75 in 4-pound cans; comb 50c per section. Honey is in good demand; but the supply is limited, owing to a short crop caused by dry weather conditions.—W. J. Sheppard.

CALIFORNIA.—At wholesale, extracted honey is selling at 17-20c, comb at \$7 per case. At retail, extracted 25-30c, comb 30-45c per section. Demand slow.—L. L. Andrews.

CALIFORNIA.—About nine-tenths of crop is out of hands of producer. Crop is not moving readily. Extracted honey is retailing at 20-35c. I have never seen such a poor demand, practically no honey being sold. Conditions will not improve till after presidential election according to general opinion. Prices are prohibitive. This State is supposed to produce about 1200 carloads of honey following a wet winter, but this season has not produced a quarter of that amount, tho it seems an average big crop to those that have not been in the business very long.—M. H. Mendleson.

FLORIDA.—Ninety per cent of crop is out of hands of producer. The crop is moving readily, and the market will soon be out of honey. Market for comb honey is bare. Extracted is selling at wholesale for 65c to \$1.00, a quart, at retail for 75c to \$1.50. The demand is good and picking up for winter and spring. No offerings, as the 10 per cent held will be fed back to the bees for winter.—C. H. Clute.

FLORIDA.—This State did not have much honey to sell early in the season, but the cabbage palmetto trees have given a good crop, which is not yet extracted. Extracted honey at wholesale is about 16c, retailing at \$1.20. The retail demand is good.—Ward Lamkin.

IDAHO.—Seventy-five per cent of comb and five per cent of extracted are out of hands of the producer. Comb is moving rapidly, extracted slowly. At wholesale, extracted is selling at 18-20c, fancy comb \$6.75-7.00 carlots. At retail, extracted 50c pint jar; 80c upward qt. Comb honey 30c upward. Demand poor but improving as weather gets cooler. Producers are holding extracted for 18c in carlots.

Hear that two ears sold at this figure.—E. F. Atwater.

ILLINOIS.—At wholesale, extracted honey is selling at 20c, comb at 30c. At retail, extracted 30-40c, comb 35-45c. There is better demand as fruit clears from the market. Producers are holding for 20c extracted, comb 30c. Illinois is having a very short crop of honey.—A. L. Kildow.

MARYLAND.—At wholesale, extracted honey is selling at 20-25c, comb at 26-30c. Extracted is retailing at 35c, and comb at 35-50c. Demand is not so good on account of drop in sugar and general downward trend. Producers are selling as fast as trade demands.—S. J. Crocker.

INDIANA.—Movement of honey crop slower than usual at this time of year, due to unusually large amounts of fruit and low price of sugar. All honey sold direct to consumers or to retailers. Retail price of extracted 30-35c in pails; comb honey, \$8.40 per case, 45c per section. Demand seems to be increasing. Producers are holding for 25c in 60-pound cans.—E. S. Miller.

IOWA.—Three-fourths of crop out of producer's hands. Honey crop is moving freely. At wholesale, extracted is selling at 18-20c, comb at \$7-7.50 per case. At retail, extracted 25-30c, comb 35-40c. Demand is fair, the wholesalers are not taking hold very freely. About all the producers are closed out, some holding for 20-22c for extracted and perhaps \$7.8 for comb.—Frank Coverdale.

MASSACHUSETTS.—About 15 per cent of crop sold, going very slowly since price of sugar dropped. No sales reported at wholesale. At retail, extracted is selling at 40-60c. Very little comb in market. Demand is very light.—O. M. Smith.

MICHIGAN.—Possibly one-half of the crop is out of hands of producer, but many of the large producers have sold very little. The crop is moving well where a local trade has been cultivated. In a wholesale way, the crop is moving slowly. Extracted honey is selling at wholesale for 20-27c and comb at 35-40c. At retail, extracted is selling at an average of 35c a pound, and comb at 45c a section. The demand at retail is good, but at wholesale poor. Producers are holding for same prices as last year's sales.—B. F. Kidrig.

MINNESOTA.—Over half of crop is out of producer's hands. At retail, extracted honey is selling at 25-35c; comb, at 45-55c per section. There is nothing doing at wholesale, but at retail the demand is growing fast and at a good price. Producers are holding extracted for 20-25c in large quantities.—Chas. D. Blaker.

MISSOURI.—Honey all sold. At wholesale, extracted sells at \$3.50 a gallon; comb No. 1 \$5.50, fancy \$7.50-8. At retail, extracted 85-100c a quart; comb, 40-50c a section. The demand has not been very good. There were 25 beekeepers at the meeting last night, and none had any honey left worth while to talk about.—J. W. Romberger.

NEBRASKA.—A very small portion of the crop is out of the hands of the producer. It is not moving rapidly; producers are waiting for higher prices. At wholesale, extracted honey is selling at 20-25c, comb at \$7.50-8.00 per case. At retail, extracted 30-35c, comb \$9-10 per case. Demand slow.—F. J. Harris.

NEW JERSEY.—At wholesale, extracted honey is selling at 20c and comb at 30c. Extracted is retailing at 50c a pound jar, \$1.25 quart; comb at 50c.—E. G. Carr.

NEW YORK.—At wholesale, small lots of extracted honey are selling at 17-20c, jobbing lots 17-18c; comb \$7.8 per case. At retail, extracted is selling at any price the beekeeper's conscience will allow from 20-35c; comb, 40-50c. Market is improving for extracted at wholesale, but not so brisk for comb. Nine-tenths of honey is sold. Most beekeepers here realized the futility of holding for war-time prices.—F. W. Lesser.

NEW YORK.—At wholesale, white extracted honey is selling at 20-23c, comb \$7.50-8.50 per case of 24. At retail, extracted 30-50c depending on locality, comb 40-50c. The demand at wholesale is very slow; retail from producer to consumer good.—Geo. H. Rea.

NEW YORK.—Three-fourths of white honey crop is out of producer's hands, and many beekeepers are buying outside honey to supply their trade. Retail movement is strong. There is a good crop of fall honey most of which is still in pro-

ducer's hands. At wholesale, white extracted is selling at 20-25c; dark 15-20c. Comb, white No. 1 and fancy \$7.20-8.50 a case. At retail, extracted 25-40c; comb, white 40-60c; dark 35-40c a section. The retail demand is extra good; wholesale slow but improving. Producers are holding for 20-25c wholesale for white extracted; comb is practically all sold.—Adams & Myers.

OHIO.—Seventy-five per cent of honey crop is already out of hands of producer. At wholesale, extracted honey is selling at 15c, comb at 30c. Extracted is retailing at 20c, and comb at 35c. No demand at present. Producers have been holding for 20c but with no buyers, so sold mostly for 15c.—Fred Leininger.

OKLAHOMA.—Fifty per cent of crop out of hands of producer. The crop is moving readily. At wholesale, extracted is selling 27-30c and retailing at 35-45c; comb is retailing at 40-50c. The demand for home product is fairly good.—Chas. F. Stiles.

ONTARIO.—About three-fourths of crop out of producer's hands. The crop is moving normally. At wholesale, light extracted honey is selling at 27-32c, comb at \$3.75-4.75 per dozen. At retail, light extracted 32-40c, comb 45-60c. Demand at wholesale somewhat slow, owing to uncertainty in the sugar market and the possibilities of falling prices. Producers are holding for above prices, which were recommended by the Ontario Beekeepers' Ass'n, and honey is selling at these prices.—F. Eric Millen.

PENNSYLVANIA.—Clover honey all gone. Buckwheat just harvested, but moving well. At wholesale, extracted is selling at 22½c in small lots, comb 25c. At retail, extracted 25-28c, comb 30-35c. Demand good. Producers are holding for clover honey 22½c, buckwheat 18c.—Harry Beaver.

TEXAS.—Practically all the honey is out of the hands of the producer. At wholesale, extracted honey is selling at 18c, comb at 22c. At retail, extracted 20c, comb 25c. Demand is good both wholesale and retail. No producers are holding.—J. N. Mayes.

TEXAS.—The honey crop is all out of producer's hands. At wholesale, extracted is selling at 14-18c, comb at 18-20c. At retail, extracted 25c, comb 30c. Little demand at present.—H. B. Parks.

EAST TEXAS.—At wholesale extracted honey is selling at 16-20c and retailing at 20-30c. Demand steady. Producers are holding for 20-30c.—T. A. Bowden.

UTAH.—Perhaps three-fourths of crop is out of hands of producer. At wholesale extracted honey is selling at 13-16c, comb at 20-25c. At retail, extracted varies from 18-30c according to package; comb, 22-30c. But little moving in a wholesale way, good local demand by consumers at somewhat reduced prices. As sugar prices tumble, many producers are willing to concede almost anything in order to sell.—M. A. Gill.

WASHINGTON.—Very little left in producer's hands. At wholesale, extracted honey is selling at 20c. A five-pound pail retails at \$1.35. Very little stirring at wholesale; the most of the honey sold has been at retail. Producers are holding mostly for 20c.—Geo. W. B. Saxton.

WISCONSIN.—At wholesale, extracted honey is selling at 20-25c, comb 30-40c. At retail, extracted 25-35c, comb 35-50c. Producers are holding for 20-30c.—H. F. Wilson.

Special Notices by A. I. Root

"HEAVEN AND OUR SAINTED LOVED ONES."

The above is the title of a little pamphlet of 24 pages sent out by the Rev. E. W. Pfaffenberger, editor of the Western Christian Union, Boonville, Mo. It may be had for 10 cents, or 20 copies for \$1.00, by addressing as above.

As a rule I do not favor any attempt to tell us what heaven is like or what will happen after death. A careful study of the Bible, it seems to me, indicates that God the Father has not seen fit to tell us very much about it. The book mentioned has been read by many with great pleasure, and has been the means of bringing comfort to many a bereaved soul when loved ones were taken away. The numerous quotations from scripture bearing on the matter, gathered together, are valuable.

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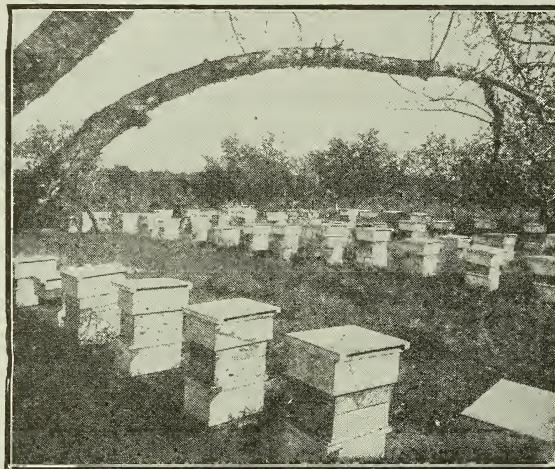
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CATALOG AND PRICES ON BEE SUPPLIES, BEESWAX, WAX WORKING INTO COMB FOUNDATION, AND COMB RENDERING FOR THE ASKING

GLEANINGS IN BEE CULTURE

NOVEMBER, 1920



WHILE WE ARE paying our tributes to Dr. Miller, there is one thing more the editor feels he

Dr. Miller on Winter Stores. should say; and that is, that he was clear ahead of his time when he came out with a strong pronouncement in favor of natural stores instead of sugar syrup. It came about in this way:

Some 10 or 12 years ago the editor casually remarked thru these columns that it was generally believed by good beekeepers that good sugar stores well sealed are better than sealed natural stores for winter food. Immediately Dr. Miller came back in his department, *Stray Straws*, objecting to the statement, and adding, "How long has it been believed that sugar stores are better than natural stores?" The editor still believes he was correct as to what was then accepted as good practice on the part of the beekeeping public generally, and insisted that at the time he was only reflecting those views. Dr. Miller retorted by saying that he did not care if the whole world was against him, that pound for pound natural stores are better than sugar stores. Of course, he specified good honey and not unripened aster or other fall stores. At the time, Dr. Miller was ably supported by G. M. Doolittle and J. L. Byer. The latter asserted that a number of the prominent Ontario beekeepers had discovered that stores of good honey well sealed would go further than sugar stores.

There are not a few who hold to the contrary view at the present day; but the pendulum is swinging, and swinging strongly, to the position held by Dr. Miller when he was considered as all but a heretic on the question.

Lest our position be misunderstood, we will admit that sugar stores fed early, and sealed in the combs, are equal to or possibly better during the coldest part of the winter when the bees are not breeding; but after that, honey stores are unquestionably better. When a colony has exclusively sugar stores it incurs the great danger of spring dwindling if the spring is bad, because there will be no young bees to take the place of the old ones dying off. Sugar stores are likewise probably equal to, or better, during the period of actual confinement of bees in cellars. When we say

"sugar stores" let it be understood that no brown sugars will answer. Some of us learned to our sorrow last winter, when we could not get granulated sugar, that brown-sugar stores contain too much gum. Better by far have an inferior honey than any brown sugar or molasses.



IN THE face of the sugar market wabbling like an ordinary up-to-date politician, and in the face of government



The Honey Market.

reports on honey that indicate a "dull season," no sales," and "no demand," some beekeepers may be inclined to lose their heads. But there is no cause for alarm. What is taking place is exactly what was to have been expected, only the most of us hoped that it would not come quite so soon. All should remember that, as a result of the great World War, our country, as well as all others, is going thru a process of reconstruction—a process that was inevitable. Every one has known, of course, that war prices were inflated, and that necessarily a time would come when those prices would come down. Foods particularly are showing a decline—especially sugar, vegetables, and fruits. But honey has suffered by no means the same decline that some foods have. Indeed, it is fair to say that it has more than held its own. It is remarkable that honey prices have not gone lower than they have.

Honey is apt to act in sympathy with sugar. When the latter goes up, the former climbs with it. But, most fortunately, honey has not suffered the same ratio of decline that sugar has; and beekeepers, instead of being scared, should be happy that they are not hit harder than they are.

There is another cause for congratulation; and that is, that the very finest table honeys are only indirectly affected by the decline in sugar. As a rule, the best extracted honeys net the producer about 50 per cent more than the wholesale price of sugar; and a glance at the markets will show that this ratio is holding good at the present time. It is largely the medium grades of extracted that are directly affected by the price of sugar; and even then the bakers must have invert sugar; and an *artificial* invert sugar will not compete with a good grade of amber extracted honey, which is

a natural invert sugar. Of course it is understood that bakers always use granulated sugar, and that in large quantities. But they also require an invert sugar—either granulated sugar inverted by acid, or honey that needs no doctoring. Just at present honey is more than holding its own for their purpose.

But perhaps the beekeeper is alarmed by what he sees in the government honey reports. It should be remembered, however, that government quotations are based on what buyers, jobbers, and commission men tell the government reporters, who, in turn, transmit what they are told to the Bureau of Markets at Washington. Naturally these reporters get their information from somewhat prejudiced sources. The city buyers are inclined to talk "no market," "no demand," etc., because that kind of talk would mean a lower price to them. It is plain that it is no fault of the Bureau of Markets that the situation is not painted brighter than it is, because the government is not supposed to give futures or prospective prices, but to report exactly what it finds on investigation of actual sales and crop movements.

This should not be construed as in any manner criticising or discrediting the work of the Bureau of Markets. The government honey reports have done good, and we could ill afford to have them stop now, and there is no good reason to suppose that they will. The situation now is "a condition and not a theory."

The general public should understand this economic fact—that, when prices are advancing on general commodities, the market on those commodities is active, and both buyers and consumers are interested in buying and buying heavily before the price goes any higher. But when the general market is declining all along the line, both buyers and consumers are inclined to buy in small lots and then wait to see what is going to happen. This is precisely the situation with regard to honey today. The large buyer is not going to lay in a big stock until he knows that the market has stabilized, and he will be mighty sure that it has stabilized before he runs a chance of losing on a big purchase. In like manner the housewife is not going to lay in a big stock of foods when prices seem to be going down. She will buy from hand to mouth just as the jobber does, getting only enough for her immediate needs.

We do not believe there is any one in this country who can tell whether prices on extracted honey are going to be lower or higher; but there is one thing of which we may be sure: The time is coming when there will be an active demand for honey. That does not necessarily mean that the price will be higher. While there is no disguising the fact that there is no great movement of honey at the present time, it is mighty encouraging that the large honey warehouses throughout the country are not

filled with honey. It seems as if the time would come when those warehouses will have to have a supply. There is no economy in working from hand to mouth—in buying in small lots and paying freights on small shipments, and then, worse than all, waiting almost indefinitely before deliveries are made.

What advice have we to give? Absolutely none. The question whether the producer shall sell or hold will have to be determined locally and individually. We certainly do not advise congesting the big markets just now. At retail, honey is bringing good prices; and our advice to beekeepers is to sell locally and where possible, sell at retail. But when you do, put up your honey in attractive form, and be sure that it is good honey.

We have never seen the time, and we do not expect to see it now, when a really fine article of extracted table honey will not bring a fair price as compared with other articles of its class. Even at the present price, whatever that may be, we should not forget that a pound of honey will buy more of other foods than it did at the highest prices that prevailed during war times. Don't forget that.

It would be good business for local beekeepers to advertise. The owners of this journal will do their share in that line, and even more than their fair share. Watch the popular magazines, especially those going to women.

So far we have not said one word in regard to **comb honey**. In spite of the decline in all lines of food, it is encouraging to know **comb honey** has more than held its own. Indeed, it is selling now for **more** than it ever did before in its history, and there is a great demand for it. But there is only very little of it in the United States today, and the markets are practically bare. Bottlers are putting out some very attractive packages of extracted honey; but no liquid honey in the bottle can begin to compare with beautiful white comb honey in clean sections. Somehow a pretty white comb of honey gets a hold on the housewife—she "must have it," and she will have it when she sees a fine article, irrespective of the price. After the great war broke out, comb honey did not bring any higher price than extracted. The export demand called for something that would ship. In fact, the liquid article seemed to have a better demand. We urged housekeepers at the time to run for extracted honey. Times and conditions have utterly changed since then. The tables have turned. Comb honey brings more than double what it did before the war. All of the old comb-honey producers should go back to the production of comb honey, and also many new ones. This will have a tendency to tone up the price of extracted, and at the same time supply a demand for comb honey that never can be satisfied.

Taking it all in all, we believe that beekeepers have much to be thankful for.



George S. Demuth

WE have already notified our readers that George S. Demuth, of the Bureau of Entomology, a man who has lectured on beekeeping in almost every State in the Union, as well as giving most careful attention to bee problems in those States, will become editor-in-charge of *Gleanings* from now on. Before he begins to take a hand in the work, and while he is finishing up his labors in the employ of Uncle Sam, it is fitting that I should tell our readers something about the man and his qualifications for the new job he is about to undertake.

For the last 10 years I have had my eye on the man. More and more as duties have crowded on me, and as the years went by, it became increasingly evident that I should have to have an assistant who could relieve me. I made overtures to Mr. Demuth a few years ago, but was unable to get him. I felt all along that I needed a man who understands beekeeping problems all over the United States. These problems are so varied and so different in different States of the Union that it needed some one of nationwide knowledge of beekeeping conditions. Mr. Demuth, trained as a teacher, had a very successful career as foul-brood inspector in Indiana before he entered the government service. He also made his bees pay. Even after he left his home in Peru, Ind., and went to work for Uncle Sam, he still kept his apiaries in Indiana and made them pay, and pay big, notwithstanding he was 500 miles away. While in the government service the only time he was with his bees at all was during the vacation period in summer. Mr. Demuth pursued the policy of put-

ting his bees up so well in the fall that they needed no attention whatsoever in the spring except such few directions as he could give to an attendant until he came to see them the following summer. And even after he left the bees he would tell an attendant what else to do with them. It was a case of let-alone beekeeping for 11 months of the year that was a wonderful success. If I should tell our readers the crops of honey he has been harvesting year after year, 500 miles from his bees, with only four weeks of personal attention, they would hardly believe it. But his income from his bees has been very much in excess of his salary received from Uncle Sam, and that was no small figure.

While he was in the government service for a period of 10 years he had at his elbow one of the best scientifically trained minds in the United States. I refer, of course, to Dr. E. F. Phillips. It is one thing to know practical apiculture. It is another thing to know how to interpret certain known facts. Phillips and Demuth have made a working team that has materially advanced modern apiculture in this country. We consider that a man trained in scientific apiculture by Phillips is no small acquisition to *Gleanings'* staff.

In the government service Mr. Demuth has traveled all over the United States; and while doing so he has gone into beekeepers' homes, looked over their apiaries, and studied their problems first hand. In not a few instances he has pointed out mistakes that men who have been long years in the bee business have not observed. The chief mistake, as pointed out elsewhere, was in not having colonies strong enough in harvest.

While his hearers have believed this, they have not practiced it. The main reason for the failure, as he said, was poor wintering; and poor wintering was due to a lack of stores and insufficient protection in the first place.

Personally, George Demuth is one of the most likable of men. Out of a warm heart and even temper spring gentleness, kindness and charitableness for all men and all views.

As I have already stated, I shall continue to gather data from all over the United States and send them in to Mr. Demuth. I shall do the field work, writing feature articles and some editorials; but the responsibility of making a good journal will rest on the shoulders of Mr. Demuth. I shall likewise throw material into the hopper, including the best photographs that I can produce; but Mr. Demuth will make the selection. Miss Fowls will continue as assistant to him, and H. G. Rowe will be managing editor as before.

E. R. ROOT.



OUR SOUTHERN beekeepers, or at least those in the tropics and semi-tropics, used to say they were

The Wintering Problem North and South. not interested in the discussion of how to winter bees, as they had

no winter problem. But many of them have since learned to their sorrow—especially those who have gone from the North to the South—that bringing bees from a late fall into early spring is often a more serious matter in the Southland than here in the North. It does not need protracted periods of zero cold to kill bees. In fact, cold will not kill them when conditions are right. The serious mistake made by many of the southern beekeepers is in not having sufficient stores. A colony in the South requires two or three times as much honey as one in the North; and unless it is well supplied brood-rearing will be held in check, with the result that there will be a weak colony entirely unfit to gather the first flow of honey. A colony that is not strong by the time of the first flow, so far as the honey crop is concerned, might just as well be dead, and that same principle applies either north or south.

Throughout some of the southern States and in California the editor has run across hundreds and hundreds of weak colonies. When the fact was brought to the attention of their owners they often said they did not know why their colonies were weak. An examination of the combs in practically every case showed that the bees must have fallen short of stores in the fall. Twenty-five pounds of stores in a climate where the snow seldom or never falls is altogether inadequate to carry a colony through the next honey flow, which may be in February or March.

Some southern beekeepers are making the mistake of saying that 25 pounds of stores will be enough because "the bees will be

gathering something all winter." But too often this expected "something" does not materialize, on account of a peculiar winter—a winter that is not so uncommon as it might be. It is far better to have 50 or even 75 pounds of stores in reserve. If the bees gather something during the winter, well and good; and should there be a surplus of stores in the spring after new honey comes in, the old stores can be extracted.

It is always a mistake to draw too heavily on a colony's reserved supply for winter, either north or south. M. H. Mendelson, Ventura, Calif., one of the oldest beekeepers in that State, has repeatedly made the statement that if the beekeepers would allow their colonies to have more stores in the fall they would not only avoid starvation but would have strong colonies for the orange, which comes early. From information which the editor gathered in California, not half of the colonies in that State are strong enough to be of any use in the orange flow that is often heavy. The same general mistake is made in the Carolinas and Georgia, as well as in Florida, Alabama, and Texas—that is to say, the lack of stores during the previous fall has resulted in weak colonies the following spring—colonies that are practically useless when the flow comes on.

The new editor-in-charge of Gleanings was one of the first, if not the first, to discover this great defect in semi-tropical wintering. Before he takes formal charge—that is, before he arrives in Medina—we feel that this statement should be made.

So far we have touched directly only on the southern problem. Much that we have said thus far would apply to the northern beekeeper—the one whose bees are or ought to be, at least, in packing-cases, double-walled hives, or good cellars. The bees in the colder climates are not threatened with starvation to anything like the degree that the bees in the South are; but unless the colonies are well supplied with stores—preferably natural stores—well housed, their chances of securing a crop the following season are very much less.

The matter of how to pack the bees or how to construct the cellars has already been covered in these columns. If, then, the bees are well supplied with stores, and are well housed, the northern beekeeper, so far as his bees are concerned, can fold his hands and take life a little easier; but, so far as his business is concerned, he will not fold his hands. He will get ready for the next season, and that is no small job. He will clean up his supers, sort over his combs, nail up his frames and hives, and put in his foundation. He will select his locations for outyards, having always in mind accessibility. If he is any kind of salesman he will sell his honey locally; and if there ever was a winter when this should be done it is the one before us.

FRIENDS PAY TRIBUTE

To the Memory of that Great Beekeeper and Friend of All Beekeepers the Late Dr. C. C. Miller

FROM beekeepers everywhere have come expressions of deepest sorrow and regret because of the death of the venerable and venerated Dr. C. C. Miller, whose beautiful spirit departed this world at his home at Marengo, Ill., in the early morning of Sept. 4, 1920. The news of his death came to these friends with a peculiar sense of sorrow. It meant the loss not only of a friend and counselor but of a truly great character and great heart. It was as if a loved and loving father had risen suddenly from the family circle about the evening fireside, and gone out into the night to return no more. The heart ached, the memory longingly wandered back over the path of the years they had so pleasantly walked together.

Now these friends of Dr. Miller come to pay tribute to one who was truly their guide, philosopher and friend.

LIFE AND WORK OF DR. MILLER.

The life and work of Dr. C. C. Miller were a benefit to the beekeeping of America and of the whole world which can be measured accurately only in after years. Those of us who have had the pleasure of laboring in this field while he was making his contributions to the science and art of beekeeping know well that in many ways we are indebted to him, but it will take time for the proper weighing of his life in terms of helpfulness to fellow-beekeepers. One can now do no more than to express feebly a sense of personal loss and to tell a few of the more outstanding benefits from his work. One thing is clear: there has been no beekeeper of the past half century who was his superior.

Beginning in 1861 and until his death, Doctor Miller was interested in bees, a record of prolonged activity in this vocation rarely if ever equalled. Since 1878 it was his sole business. Naturally his earliest beekeeping was unimportant, but in 1870 he made his first contribution to the beekeeping press, and for fifty years his writings have formed an important part of our literature. Even the editors of the bee journals have not contributed more to the current literature than did he and probably he wrote more "copy" than did any other writer of the time. His writings are distinguished by accurate diction, clarity, humor, and sympathy.

To discuss in detail the investigations that Doctor Miller carried on in beekeeping would virtually be to write a history of beekeeping of the past half century, for there have been no important discoveries or events of that period in which he did not play some part. He began beekeeping before the days of the comb-honey section and lived until the time when extracted honey largely replaced comb honey. The period of comb-honey production brought forth the keenest work in beekeeping practices of any period in beekeeping, for all the problems are greatly intensified in comb-honey production. Naturally we do not give to Doctor Miller credit for all the brilliant work of this period, but all must admit that no man of the time made more important contributions to honey production than did he.

In his first book, "A Year Among the Bees," he recognizes the two great problems of that and of the present day as follows: "If I were to meet a man perfect in the entire science and art of beekeeping, and were allowed from him an answer to just one question, I would hesitate somewhat

whether to ask him about swarming or wintering. I think, however, I would finally ask for the best and easiest way to prevent swarming, for one who is anxious to secure the largest crop of comb honey." His later books contain almost the same phrasing, except that he omits mention of the winter problem, indicating clearly that during the comb-honey period swarm control stood out above all other problems in importance. In the brilliant work on this subject he had no superior and to his work we go for the methods which finally won out. However, comb-honey production, and the small colonies incident to the beekeeping methods of that period, brought on the wintering problem acutely, and in this work also he excelled. A careful study of his writings reveals a knowledge of the needs of the bees during the winter, and his results were better than those of most other beekeepers of the time.

Altho comb honey is passing, until recently Doctor Miller continued to produce it, and as late as 1913 (at the age of 83) he broke all records of per colony production of sections. But even at his advanced age he did not stick tenaciously to his old methods, for during the past few years, altho reducing the size of his apiary, he took up the production of extracted honey. We can not paint an adequate picture of the character of the man, but we get an illuminating sidelight in the fact that he took up this new line, not to make his work easier, not because others were producing extracted honey, but because he might thereby help to make honey a more freely used food on the table of the average family.

The more recent changes in beekeeping methods in no way reduced the importance of Doctor Miller's work and influence. One of the most important, if not the most important, contributions of his life came late in his experience. In 1909 (one is tempted to say fortunately—for beekeepers) European foul brood broke out virulently in his apiary. Up to that time various methods had been advocated for its control, but there was no agreement on the subject and virtually no progress was being made. Doctor Miller's location is not one in which this disease would continuously do serious damage, but thru a total failure in the white-clover honey crop that year his apiary became heavily infected, giving him abundant experimental material. The work which he did that summer and the careful record which he month by month laid before the beekeepers thru the journals form the basis for the first real progress

in the control of the disease, which has caused and is still causing losses of thousands of dollars annually. The point which deserves special emphasis is an appreciation of the man is the fact that the disease was virtually absent from his apiary the following year, and from that time on he was not seriously troubled by it, for in one season he had solved the problem of European foul-brood control. To the work he took an accurate knowledge of the efforts and mistakes of others, an appreciation of the nature of the disease and, above all, a keen scientific mind. His work on this disease is his greatest monument.

To have led beekeepers in investigations of better methods was an accomplishment, but perhaps as great a service lay in his efforts to prevent mistakes. The comb-honey era was replete with bad methods, proposed in the effort to solve the serious problems of the time, and no beekeeper outdid Doctor Miller in pointing out the errors arising from incorrect or too scant observations and from faulty conclusions. He was at all times tolerant, yet he could in his finished style lay bare in a few words the foibles of the upstart or the vicious advice of the unscrupulous. He was tender with those who erred thru lack of information, and it sometimes takes a close observer to detect his glee in the slaughter of the ungodly.

We can continue to point out the good things that Doctor Miller did, and beekeepers will continue so to do for many years, so long as bee-keeping is carried on. These things serve to make clear the admiration and respect in which he is

found himself more and more interested as the years passed. The youthful spirit of the man is illustrated by the fact that when over eighty years of age he took up a new line of work, the growing of gladioli. Always a lover of flowers, he began this work at this age as a specialty. He grew corms for sale by the thousands. The flowers were not for sale, however, for aside from the dozens of cuttings in his home his best "customer", as he expressed it, was a children's hospital in Chicago, to which the cut flowers were sent daily. Not only was he growing these flowers on a commercial scale, but at his advanced age he carried out experiments in cross-pollination. Recently he made several hundred crosses and grew the resulting seedlings, and of the number he saved out for further work over a hundred of some promise. Of these he finally selected over twenty of the best and he told us that he hoped from these to get six or eight varieties worthy of perpetuation and naming. It takes perhaps ten years to secure enough corms to offer a variety for sale, but this seemed not in the least to decrease his eagerness for new forms, which he could scarcely hope to use commercially. His interest in these flowers was so keen that he hesitated to let us, uninitiated in gladioli, to find out how "crazy" he was about them, and he refused to tell us what he had paid for certain rare and valuable corms. This at the age of ninety years! Such a man is one for whom a person a half century younger in years can feel the same friendship and affection as for one of his own age. His mind was as young as ever: only his body was old.

To explain the heartfelt affection in which he was held by beekeepers generally would be a foolish task for any but a master writer. In essential respects I have an advantage over the master writers, for I knew Doctor Miller, and, too, I know how beekeepers feel. I know that his death brings to all of us a feeling of great and irreparable loss. Yet at the same time our feeling can not be that only of sorrow, for his death was but the closing of a finished life. He had finished his work, permitted to him by the worn body that served as a vehicle for his young mind, and our feeling at this time can scarcely be other than one of thankfulness that he lived so long and that we were privileged to know him, to learn from him and to imitate him in his all-embracing desire to help those with whom he had contact.

To put these thoughts in words is not an easy task, nor would it now be attempted were it not for an assurance that the readers of these comments will charitably say that here are stated feebly what we all think: in the death of Doctor Miller we have lost a dear and close friend, but we are better beekeepers because of his work and better men because of his life.

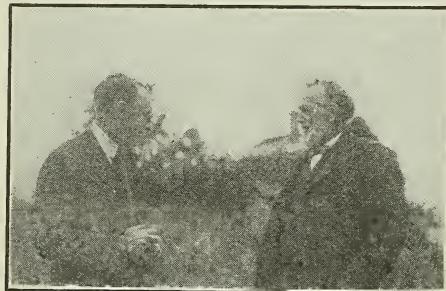
Washington, D. C.

E. F. Phillips.

* * *

UPRIGHT, STERLING LIFE.

While away from home last week, preparing one of our apiaries for winter, Mrs. Byer called me by long distance phone and informed me of Dr. Miller's death. I was spending the evening at the home of some beekeeping friends, and when I told them that Dr. Miller was dead, no questions as to who was meant were asked, for while there are doubtless many men of that name in the land, to beekeepers everywhere there was but one "Dr. Miller." As one of the younger men engaged in the business, it was not my good fortune ever to have met the good Doctor personally, but I have had a very little correspondence with him and, in common with a great host of others, learned to love the man for the many admirable qualities he possessed. Anything I could say as to his qualities as a beekeeper would be superfluous, as we



Dr. Phillips and Dr. Miller talking it over. (Aug. 20, 1920.)

held by his fellow beekeepers. Such statements fail, and fail utterly, to make clear the affection and love in which he was held by beekeepers everywhere throughout the country. I have had the opportunity to speak before groups of beekeepers in most parts of the country, and it has rarely been possible or desirable to close a talk on bees without telling of something that Doctor Miller did for the industry. Reference to his work and to him invariably brings forth a warm smile of appreciation. A few years ago I took some photographs of him in the apiary and these have been used all over the country as lantern slides: never have they been shown that they did not call forth applause. How may we account for this high esteem in which he is held by all his fellow workers?

The outstanding characteristic of Doctor Miller's life, and the thing for which he is most loved, was his keen interest in "things," as he expressed it. Two weeks to the day before his death five beekeepers visited him, and of those present at that happy meeting no one was younger in mind than he. He told us then that he had always supposed that as one grows old his interest in things would fade away, but that on the contrary he

Characteristic Attitudes



"What's That?"



"Now, let's see about it."



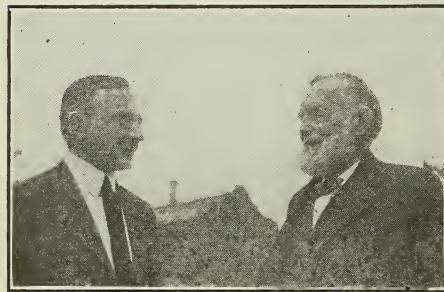
"You are dead wrong,"—



and—the laugh was on the
other fellow.

all knew him as an outstanding figure in the business not only from a national but from an international standpoint as well. He was not only an exceptionally good beekeeper but he also possessed to a remarkable degree the faculty of being able to impart the knowledge he had to others. But it was not only as a beekeeper that he influenced so many of us, but rather because of his upright, sterling life, devoid of any suspicion of cant, but nevertheless an earnest and fearless exponent of principles he believed to be right. He possessed the gift of being original and anyone who has ever had any correspondence with him knows that brevity was a trait he was gifted with. As to his originality, pardon me for recalling a little personal incident. As many know, our departed friend was a stickler for good English, and he always protested against the term "shook swarming" so much in vogue some time ago. I happened to refer to this phrase one time in Gleanings and called it "butchered English." A few days after Gleanings was off the press, a post card came to me with the following brief message: "Dear J. L.—'Butchered English.' Ha, ha! Best thing that has appeared for a long while. Tell Mrs. Byer that I just love that good man of hers. C. C. Miller." Coming from anyone else, I would have been anything but pleased with such a communication, but coming from Dr. Miller, frankly I appreciated it much at the time and more than ever now that he is gone.

Dr. Miller stood for the highest type of a real Christian. He not only professed to be a Christian, but lived such a life that no one could know the man and not know what he believed in that line. While the great majority of his friends no doubt



Listening to what George S. Demuth had to say about it.

believe in the principles he upheld, yet his life was a pattern for even those who believe differently, for in the words of Burns:

"If there is another world he lives in bliss;
If there is none, he made the best of this."

Markham, Ontario. J. L. Byer.

* * *

A LIFE WELL SPENT.

With the passing of Dr. C. C. Miller, consistent Christian, savant and prolific apicultural writer, the beekeeping world has sustained an irreparable loss. His characteristic thoroness, fairness, fearlessness and love of seeking after the truth has rendered his service to beekeepers of supreme value, and they have abundantly profited by his life and work. The thoroness with which he examined and discussed apicultural questions gave to his conclusions a peculiar Miller value. He possessed the rare literary gift of fine and accurate definition between what he knew to be true and that which was doubtful or which had not been demonstrated. Truly his was a life well spent, industriously, aggressively and vigorously: not alone for personal compensation but by letting his light shine, for the

material and moral uplift of all engaged in the occupation he loved so well. It is often said that the character is stamped in the expression of the face. What a wonderfully beautiful and lovable character, then, was that of Dr. Miller.

The ranks of beekeepers past and present include many characters remarkable for their good will and liberality in endowing apiculture as they have been endowed, and to one of the best and greatest of these I offer this humble tribute.

Kenmore, N. Y. * * * Orel L. Hershiser.

RADIATED GOOD HUMOR AND HAPPINESS ON ALL.

I have been favored for many years with a personal acquaintance with Dr. Miller. I am not sure now as to the exact date, but it must have been nearly forty years ago that we first met at the convention of the Northwestern Beekeepers' Association at Chicago.

There was something that seemed to attract us to each other and tho we seldom met oftener than once a year, we grew to be very good friends. I was a young man then and I was "Jimmy" to him, but we had tastes in common and some of the brightest recollections of my life are of the talks I had with him during the pauses in the conventions in the various cities where we met, or on the little side trips which we made together or in company with others of the old timers.

That which impressed me most in my acquaintance with him then and since was the absolute sincerity and honesty of his life and purposes. He could see both sides of a question as few men can and when he did not know the answer to a problem, he never hesitated to say so.

A sincere Christian, he lived his creed and no one could be intimately associated with him without being bettered by it. Lovable as a man, he radiated good humor and happiness on all.

Few men have done more good to beekeeping than he has in his writings, helpful alike to the expert and the beginner.

Grand Junction, Col.

J. A. Green.

* * *

PRACTICED WHAT HE PREACHED.

Dr. C. C. Miller was one man among many, and one that all who knew him at all personally admired for probably one reason above all others, that he practiced what he preached. This quality, apart from his standing in the beekeeping profession, made him an outstanding man. His kindness and thought for the lesser beekeepers was always very much appreciated by myself. It is with deep regret that I heard of Dr. Miller's passing; but, I have no doubt that if he could be with us, he would tell us not to grieve, but to carry on.

Guelph, Can.

F. Eric Millen.

* * *

AN INSPIRATION TO OTHERS.

It never was my pleasure to meet Dr. Miller in person; but I learned to love and revere him thru his writings, which on several occasions have helped to solve problems for me. Also, his persistency in his early beekeeping life, the handicapped, has given me inspiration. The entire fraternity, and especially the newborn beekeeper, will sorely miss him.

East Jordan, Mich.

Ira D. Bartlett.

* * *

WONDERFUL PERSONALITY.

Permit me to enter this brief letter of tribute to Dr. C. C. Miller, whom it happened to be my pleasure to visit just a short time before his death.

I am too new in the bee world to appreciate fully the many things that Dr. Miller has accomplished in beekeeping. However, it must be a wonderful personality indeed, who at the age of eighty-nine holds the admiration and good will of the entire

beekeeping world. I had long wondered at this, but was able to understand after our visit. His very keen intellect and appreciation of Nature, along with his very lovable nature, were apparent in his every word and action. I think the enthusiasm which he seemed always to have had must have also been a great factor in the interest which he was able to arouse in others. He was one of the most stimulating men I have ever met.

It would be impossible for me to express in this short space my feeling with regard to the great service he has done the beekeeping industry thru his very careful observations and willingness to give the information free to all and at all times.

Madison, Wis.

H. F. Wilson.

* * *

OF MORE HELP THAN HE SUSPECTED.

Has there been anyone in all beedom half as much beloved as Dr. Miller? I think not. Everyone always has had a word of appreciation for him and for the help his words have been to them. It is impossible to specify the sundry branches of bee culture in which he has most helped.

But far and away above his service to beekeepers in their work is his life example as a thoughtful, kindly Christian gentleman. Generous in his praise, he was equally just in censuring where censure was needed. By thoughtful advice he turned many of us from unsuspected faults and helped us to about-face and attempt, like him, to be of use to our fellow men. To me personally he has been an inspiration, and his occasional letters have helped me in more ways than one, more than I can explain or than he suspected.

A few years ago it was my good fortune to spend a day at his home—and a real home it was. I treasure its memory as a precious possession.

Providence, R. I.

Arthur C. Miller.

* * *

HAD THE COURAGE TO SAY "I DON'T KNOW."

We who have read Dr. Miller's writings throughout the years of our beekeeping experience, feel that we owe much of our success to his kindly way of telling what he felt sure of, and having the courage to say, "I don't know," when in doubt. Living about 2000 miles apart, I had the pleasure of meeting the Doctor personally only two or three times. He was found to be just the kindly, genial, whole-souled man that he had been represented to be by the fraternity. A pleasant visit at his home in Marengo in 1904 added to my appreciation of his splendid qualities. He was a beekeeper who was not in the business wholly for the money that it would bring to him, but one who gave generously of his time for those things that go to make better men and better women—one, who as the lengthening shadows come year by year, had so enjoyed life that he could say, "If the next world is any better than this, it must be a fine world." What better inspiration could anyone give?

Corona, Calif.

L. L. Andrews.

* * *

ALMOST LIKE A FATHER TO ME.

I think no other man ever came into my own life and influenced it as did Dr. Miller. For 20 years he was almost like a father to me. Without him the American Bee Journal would not have been anywhere near so valuable as it was during the time I owned and edited it; as his eagle eye, his brilliant brain, and his thoro and extensive beekeeping experience were all in and upon the Journal. In some ways he was more to me than my own father. He called Mr. Root and me "his boys," and how he used to watch over us as we conducted our two bee papers! He enjoyed it, too, as did we. If ever one man loved another man, I surely loved Dr. Miller. As you know, his character and life were so beautiful, so Christ-like.

I never knew him to utter a single unkind word or remark about another person. He never even thought evil, I am sure, let alone utter it. How often I have wished that all the beekeeping world could know Dr. Miller as intimately as I knew him for so many years. No one could help being better for having known Dr. Miller. His influence was as a sweet perfume that permeated all about him. I could not restrain the tears when I received the letter telling of his death, and can scarcely do so now as I write. I only wish I could help pass on to others a little of his kindness, his love for mankind, and his broad sympathy for all. And his home life with his wife and her good sister! Wasn't it beautiful? Just a bit of Heaven itself dropped down upon earth.

Spokane, Wash.

George W. York.

* * *

REFLECTED THE LIFE OF HIS MASTER.

Few beekeepers in our whole country will be more missed or more sincerely mourned than Dr. C. C. Miller. He was a careful, thoughtful, and original student of beekeeping, and a most successful beekeeper. Comparatively few of us here in the East were personally acquainted with him, but we knew him best by his genial, kindly, and helpful contributions to current bee literature.

His articles, often bubbling over with humor and good will, were usually the first to be read and enjoyed. If you did not always agree with him, you could not help but admire and love him for his kindly way of disagreeing from you.

After all, we most often think of him as the simple, earnest, consistent, Christian gentleman, day by day and year after year, clearly reflecting



He was always a jolly good fellow. (Dr. Miller is in the center of this smiling group.)

the life of his Master. By such a life we are lifted to a higher plane and realize there are better things in life than success in business, the accumulation of wealth, or other objects so often thought supreme.

As the great Teacher forever dignified the trade of the carpenter, so the business of beekeeping has been honored and lifted to a higher plane by the life and work of Dr. C. C. Miller.

Middlebury, Vt.

J. E. Crane.

* * *

PLACED BEEKEEPING ON HIGH PLANE.

It would be difficult to enumerate even a fair share of the many ways in which Dr. C. C. Miller has been of service to beekeepers.

Perhaps the whole may be summed up in the superlative degree to which he has combined very successful beekeeping with a free and pleasing manner of writing his experiences and advice.

In his teachings what has attracted me most is the high plane on which beekeeping has been placed. He resigned both a musical and a medical career in each of which his prospects were bright,

and taught the world that beekeeping, a far more obscure calling than even now, is one good road to health, happiness, and a comfortable income.

Doubtless the most valuable part of his teachings on bee management is his careful attention to essential details, especially with regard to selection in breeding and the careful rearing of queens.

My personal recollections of Dr. Miller are confined to one meeting with him at a convention and brief kindly letters of appreciation on something in my writings which interested him. We all feel very keenly the loss of Dr. Miller.

Georgetown, Ont.

Morley Pettit.

* * *

UPHELD THE CAUSE OF CHRIST.

My first recollection of Doctor Miller goes back to days when the International was at the height of its influence, in the early eighties. He was a man who tried to hold himself free from prejudice. He tried to be of a judicial mind, and I know he succeeded singularly well. His opinion was respected in every quarter of the globe. He was firm, and when principle was involved unyielding; but not aggressive. With it all went a sweetness rare in such characters. Men can write of wherein he was of the greatest service to his fellow-men and beekeepers, but I have to go to those things which are eternal and I with him rejoice in the day when he and I shall sing the new song of a common Saviour worthy of the lamb that was slain and has redeemed us to God by the blood. He was not ashamed to uphold the cause of Christ.

Brantford, Can.

R. F. Holtermann.

* * *

HIS WHOLE SOUL ENTERED INTO HIS SINGING.

To know him was to love him.

I always associate him with his beautiful song, "Lead me to the Rock that is higher than I," that he sang at one of our conventions at the State house, when the I. O. O. F.'s were in session at the same place. They crowded the door of our room, with tears flowing down their cheeks, which they could not repress. His whole soul seemed to enter into his singing.

We cannot feel that he is wholly lost to us for with such dear friends as he was, we shall spend eternity around the throne of God, where there will be no more good-by's said.

Springfield, Ills.

Jas. A. Stone.

* * *

HIS ENCOURAGEMENT AND GOOD CHEER.

Gleanings is always a welcome guest, and how eager we beekeepers are to rip open the wrapper to see what is the latest in beedom. But as the October number was opened, the cover page told the sad story we were half expecting and yet were not prepared for. As this number with Dr. Miller's picture on the cover page reaches its many destinations, thousands of beekeepers will go about their work among the bees with heavy hearts—he was like a father to many of us. I was well acquainted with Dr. Miller thru his writings, and have many letters from him that I prize. I met him only once, and, as I remember it, he spoke only one sentence to me. It was at the St. Louis convention in 1904. I was walking by the Christian Endeavor Hotel, which was the beekeepers' headquarters, when I spied Dr. Miller. I knew him as well as if I had been brought up with him. I went up to him and introduced myself. He put out his hand and with his characteristic smile said, "The greatest pleasure of these conventions is to greet old friends and make new ones." And he made them wherever he went.

The greatest good Dr. Miller has done to beekeepers has been the encouragement and good

cheer he has given them. In a technical sense he has given inspiration to many in producing larger honey crops, as many would not have believed such large crops could be harvested if Dr. Miller had not proved it to them.

Vincennes, Ind.

Jay Smith.

* * *

GREATEST OF AMERICAN BEEKEEPERS.

Upon receipt of the news of the death of Dr. Miller we bare our heads and stand in humble reverence in contemplation of the life and work of this greatest of American beekeepers. Surely our loss is irreparable; for to whom shall we turn for the counsel, the guidance, and the wisdom which have for so many years distinguished the writings of Dr. Miller? His writings have made an especial appeal to me because of the enthusiasm and inspiration which they always contained. Surely he was a great optimist!

I loved his cheerful, happy manner not only because of its tremendous influence on others, but because to me it was an outward expression of the faith which he had in the ultimate good, his confidence in mankind, and his unerring faith in the Divine.

Dr. Miller was an honorary life member of the Michigan Beekeepers' Association, and in his passing we feel that our loss is one which cannot be replaced.

East Lansing, Mich.

B. F. Kindig.

* * *

WE ALL LOVED HIM.

We of the beekeeping world loved Dr. C. C. Miller for the better beekeeping he taught us. His own people loved him because they shared daily the courteous qualities which made of him a man. Now that he has passed from this world, we should make his loved ones feel that our hands stretch out to them across the empty spaces, attempting to share the loss with them. Yet, who shall say it is a loss? Since better beekeepers everywhere practice some of his methods, he has made himself worthy of better things than we could give him.

In his place we hold a sacred memory of him and his work. To have known him was to have gained an understanding of the words: "Verily, verily, I say unto you, except ye become as little children, ye shall not enter the Kingdom of Heaven." It has been a wonderful privilege to have been of even meager assistance to him in his efforts toward the success which was his. I am happy to have shared his friendship.

Watertown, Wis.

Kenneth Hawkins.

* * *

WE WORK WITH HIM THRUOUT THE DAY.

Doctor Miller's place in the hearts of beekeepers everywhere is a wonderful tribute to the man. We say we loved him because he taught us much about beekeeping, but others have also contributed much to our fund of information. We say we loved him because he taught so well, but others have also presented their subjects well. Behind the great mass of information he has given us and behind the method of presentation is the beaming spirit of a great and good man, which so illuminated the facts that beekeepers everywhere have been greatly influenced by them.

Those of us who have followed his teachings can get some idea of the magnitude of this influence by noting how, at every turn in a day's work in the apiary, we follow some phase of his teaching. We say to ourselves again and again as we work, "Doctor Miller would do it this way," and thus we work with him thruout the day. What a pleasure and what a privilege to work with such companionship!

Washington, D. C.

GEO. S. DEMUTH.

TURN refuse honey into profit by making honey vinegar" is a suggestion most beekeepers will do well to investigate. Properly made, honey vinegar contains from 50 to 100 per cent more acetic acid than commercial cider vinegar and has a flavor and "bouquet" that cannot be duplicated. As the vinegar is about the same color as the honey used, any color is possible from water white to dark. It is the sugar content only which is concerned in the transformation of honey into vinegar, and refuse honey of any kind can be used, and so sold as vinegar for from 40 to 75 cents a pound.

The directions are comparatively simple but must be followed faithfully to insure success. Carelessness will likely ruin the barrel of honey-water, or at best give a vinegar weak in acid content and poor in flavor. Reports are received from beekeepers who simply mix honey with water haphazardly and get "good vinegar," but my experience has been that this is risky business, usually resulting in complete loss of honey used. I have made more than 20 barrels of honey vinegar by the process described with splendid success. In fact, the demand for it is greater than the supply.

In the first place, the successful making of honey vinegar demands a warm place, 80° F. being the best temperature for growth of the yeast used to ferment the honey. At 65° F., slightly less than room temperature, fermentation goes on but much slower and with less vigor. The yeast used is a champagne yeast and should be secured before ready to make the vinegar. Compressed or other bread yeast can be used, but gives the vinegar a slightly beery taste; whereas the champagne yeast produces a delicate flavor and aroma in the vinegar, which is very desirable in the making of pickles, salad dressing, etc. Both the vinegar yeast and chemical salts necessary for best fermentation can be secured at cost on application to the Michigan Agricultural College. The price is 25 cents each for one-barrel quantities.

Before ready to make the vinegar it is also necessary to secure a suitable barrel or barrels as the case may be. Barrels previously used for cider or other vinegars or for grain alcohol are best, but these are often hard to get. The barrel must be water and air tight and thoroly disinfected with flowing steam or boiling water. Failure to disinfect the barrel properly may result in total failure thru wrong fermentation. In this connection it is necessary to point out that if fermenting honey is used for making vinegar it should be brought to a boil before dilution to kill the wild yeast responsible for the fermentation.

PROFIT IN HONEY VINEGAR

New and Valuable Kinks in Making this Vinegar as Taught by the Michigan Agricultural College

By Russell H. Kelty

This yeast and the one used in making vinegar are not the same.

When yeast and barrel are ready, the honey and wa-

ter are mixed together. By experiment it has been found that the best proportion of honey to water is one and one-half pounds of honey to a gallon of water. Soft water is perhaps preferable, but tap water can be used. Heat at least part of the water to dissolve the honey properly. The amount of honey necessary to make a barrel of vinegar will vary with the size of the barrel. It is necessary to leave an air space in the top of the barrel, and 50 pounds of honey added to 36 gallons of water is sufficient for a 45-gallon barrel. It is more convenient to mix honey and water in a tub or storage tank before pouring into the barrel. After mixing, the temperature of the honey-water should be lukewarm. Dissolve the chemicals (food for the yeast) in a quart of the honey water, add the yeast culture—one culture is enough for several barrels of vinegar—and after stirring thoroly pour into the barrel.

Bung the barrel and seal air-tight with wax if necessary. Secure a piece of rubber or glass tubing a foot long, and, using an auger the same size as the tubing, bore a hole thru the bung and insert one end of tube one and one-half inches into the hole in the bung. Dip the other end of the tube into a glass of water placed on the barrel, thus allowing gas to escape from the barrel thru the tube, but not permitting air to enter. This is necessary for best results.

Allow fermentation to continue till no further gas is given off. This usually takes from two to four weeks. Then remove the bung and add a liberal quantity of mother of vinegar, a pailful if available, altho less will do nicely. At this time air circulation in the barrel is necessary, and some prefer to assist by boring two or more small holes in each end of the barrel above the level of the liquid. Place a piece of cheesecloth over the bung and other holes to keep out flies, etc., and allow to stand from three to six months. By tasting one can tell when the vinegar is getting ready for use, but an accurate test by a chemist is necessary before the vinegar is placed on the market, as the law requires it to contain at least four per cent acetic acid. We have secured as high as eight per cent from the above method, in which case the vinegar is diluted before marketing.

This may seem like a long and tedious process, but it really is not when once one is prepared for the job; and, in our experience, short cuts have proved failures.

East Lansing, Mich.


 FROM THE FIELD OF EXPERIENCE

INTRODUCTION BY FASTING

Two More Beekeepers Discuss Problems of This Way of Introducing

Mr. Carr's article on the fasting method of introduction took notice of the difficulty in transferring the queen from the "traveling" to the "starvation" cage.

The writer has used a device which obviates this difficulty, and he has pleasure in passing on the idea. As it enables the queen to be transferred without fingering by the beekeeper, it may prove of some use to the nervous or inexperienced by facilitating this operation.

Take an empty common match-box and prepare it as follows: Slide out the inner section, and with a sharp knife cut part of the bottom out, having a margin all around of about $\frac{1}{4}$ inch. Get a small piece of window glass cut to fit snugly inside of the bottom and put in and secure there with a few drops of melted wax. Take the outer section of the box and cut a corresponding hole in one side, and when the box is put together the article is ready for use.

To use: Open the traveling cage before a closed window, and when the queen is crawling up the glass place the starvation cage (well opened) over her and when she runs up, as will be seen thru the glass, close the cage and leave her to be starved as long as thought necessary.

The introduction of the queen takes place thru the feed hole in the hive cover, or cloth quilt if used. A puff of smoke being blown into the hole, the starvation cage is placed in position over it and the outer part slipped off. If the queen does not go down at once, the glass-bottomed part can be left covered up and removed later at convenience. Archibald Fergusson.

Strachur, Scotland.

* * *

I noticed with much interest an article in the August issue of *Gleanings*, entitled "Introducing by Fasting." The plan outlined appealed to me as one having merit, and I at once gave it a try-out. So far, I have not had a single failure, and in two cases the colonies had fertile workers. It seems to me if it works with the fertile workers it would work anywhere; but, of course, I have not had time to give the plan a very extended trial under all conditions. The point I want to get at now is just how much starving a queen will stand without injury.

The writer of the article, I believe, stated 45 minutes as being sufficient time for a queen just taken from a nucleus, and an hour for a queen that had been caged for any length of time to be reduced by starvation to a state in which she would "be-

have herself." Now, in no case have I been able to get a laying queen to that state in one hour—usually it is considerably longer.

I took some young queens that had been laying about three weeks to an out-apriary in Benton mailing cages for convenience in handling. I had them caged only one and a half days, and it required nearly two hours in every case. I don't know but that may have been too long a time, but the queens were as spry as crickets and were too wild to be put in a minute sooner. So far, I can notice no ill effects; but, of course, sufficient time has not passed to tell if they suffered any injury by so long a period of fasting. While I like the plan, I think it quite probable it may call for considerable skill on the apiarist's part in judging just when the queen has had all she can reasonably stand without impairing her usefulness. On the other hand, queens may stand considerable starvation without injury. I don't know and would like to hear from someone who has had experience.

Mr. Carr also stated that he had no plan for transferring the queen alone safely and easily to the fasting cage.

For some time back I have never introduced a queen in the mailing cage with the attendant bees; so I evolved a plan to separate the bees and queen, as I generally use a "Jay Smith" push-in-the-comb cage, or a Miller-Thompson cage, with the queen by herself and with candy I know to be pure. I believe the candy used in mailing cages to be as a rule free from disease, but I don't feel like taking any chances, so I burn the mailing cages the first thing.

My plan is to make a small cage or box into which a mailing cage will slip endwise. This may be done by taking three strips a little wider than the cage and nailing them together like the sides of a push-in-the-comb cage, having one end open. Wire screen will do for the back, but the face is made of a piece of zinc queen-excluder. To use the fasting cage, remove the tacks from the wire cloth on the mailing cage, being very careful to hold the wire cloth in place so the queen does not escape. Slip the mailing cage into the other cage, open side to the excluder, raising the wire screen as the cage enters. When the cage with the queen and bees is inside the other cage it has a queen-excluder face instead of screen, thru which the bees readily pass leaving the queen. Sometimes the bees are reluctant to leave the queen, but this can be readily overcome. The above plan has worked well for me and has advantages over the method of letting the queen "crawl up a window."

El Cajon, Calif. Geo. B. Dickerson.

FROM THE FIELD OF EXPERIENCE

LESSON IN HONEY SELLING

The Efficient Direct Seller Goes Out of His Way to Please a Customer

"A farmer called on us yesterday selling honey," said the family man. "A man with enterprise enough to sell direct always has my moral support, aside from my experience that products bought of him usually represent some saving. So I said, 'Perhaps I'll take some,' and went out to his businesslike little auto truck drawn up by the gate.

"The farmer pulled a pail out of the truck. 'Five pounds,' he explained, 'Five pounds for \$1.35.'

"Haven't you something smaller?" I suggested. "That's more than we can use, really."

"Pshaw!" grunted the farmer, near-scorn in his voice, 'you can use five pounds! Why, that ain't nothing. The stuff will keep. Why, we --.'

"I was rather nettled. I told him we doubtless could consume that quantity if we had to, but our annual experience with honey was the same. We had a great appetite for it for a short time. Then the product palled on us. The family did not care for more. We could use a pint jar, possibly even a quart, but that was our limit. Didn't he ever put honey up in those quantities?

"He didn't — never had. He persisted in his astonishment that we were such poor honey-eaters. He went away wrapped up in that astonishment.

"Say!" concluded the family man, "if every direct seller was built like that chap, do you suppose I'd answer their door-bell rings? I might, but I doubt it."

Like this honey peddler, there are many farmers who sense the profit-making opportunity in selling direct, and tentatively try out the method, only to display critical lack of salesmanship in their intercourse with consumers. This honey-man did. He had a sale practically made, with an opportunity to acquire a permanent annual customer. He "fell down" miserably because of an inability to grasp quickly the situation and adapt his tactics to it.

There is a certain well-known slogan which is rigidly lived up to in many large mercantile establishments. It is "The customer is always right." Even when a clerk knows the customer is in the wrong, he is taught to abide by the slogan, "The customer is always right." The customer, whose good-will is absolutely essential to success, is no person to argue with or dispute with. At any rate, he is sincere—he believes he is right, and any intimation to the contrary is pretty sure to antagonize him.

It happened that in this case the custom-

er actually was right. He knew what his table requirements were, and there was nothing strange about them, as the honey peddler indelicately suggested. Some people don't care at all for honey. Others like a little. Some like a lot. The peddler should have recognized these varying demands in putting up his honey. Pint jars, quart jars, five-pound pails and ten-pound pails would have been a good assortment. It would have enabled him better to satisfy a retail trade.

If he had wished to push for large sales, he could still have done it in this case. He should have been well primed with information about the use of honey in cakes, candy, and other cooking. Comparatively few housewives know of the cooking value of honey. The family man, acquainted with this information, might have called his wife out. There would have been a chance of converting the family who wanted a pint or quart into a five-pound purchaser.

It is certain that, if the direct seller had used this selling point consistently in his canvass, he would have increased to a noticeable degree the total quantity sold.

This would simply have been using that intimate knowledge of his product which every salesman is expected to have. Had it not interested the family man and his wife, there still remained open a successful termination to the interview.

"I'm sorry I haven't a quart jar with me," he should have said, smiling, "but I'll put it up and bring it around. Glad to fix you out."

The merchant who goes out of his way to "fix out" a customer, whether his product be honey or baling-wire or poultry feed, is laying the foundation for permanent good-will and patronage. The honey man, ten to one, could have sold the family man another year. That he did not see his opportunity and grasp it indicated an ignorance of one principle as important in direct selling of farm products as it is in many mercantile enterprises — that "repeat sales" are the side of the business where profits hide. Permanent customers—they should be considered indispensable, whatever the product sold. The efficient direct seller is in business as permanently as the druggist, and like the druggist he needs a permanent clientele.

Boulder, Colo.

J. T. Bartlett.

BURYING BEES IN TRENCH

Idaho Beekeeper Has Used Plan Successfully and on Large Scale

I was well pleased with the result last winter of burying my bees, yet think I might improve another time. For a locality

FROM THE FIELD OF EXPERIENCE

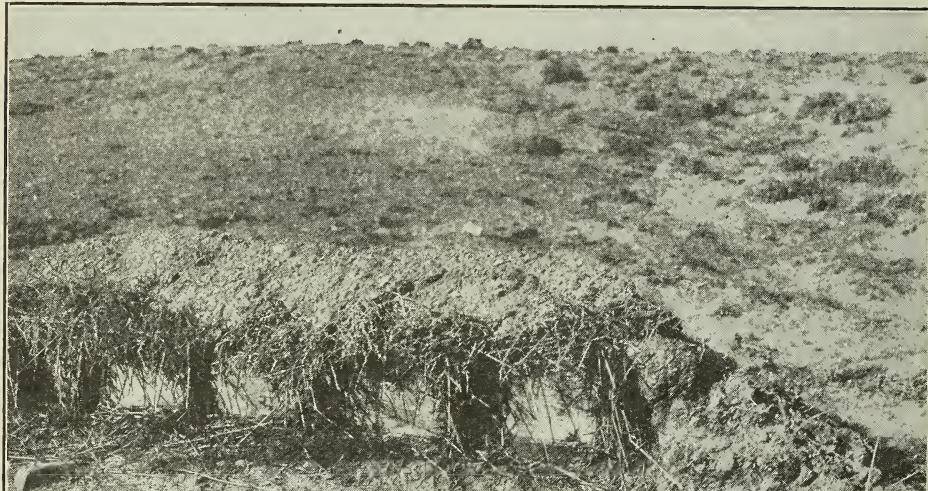
where it is cold and dry, the method might be even more desirable than for mine. Last winter I used only sufficient packing to keep the earth from going between the hives. In a cold climate I would use six inches of straw all over the hives except where the entrance-tubes are.

The trench is a dead furrow running east and west, and made with a team and plow. Another time I think I would make a back furrow, first plowing six or eight feet wide, then plowing a dead furrow in the middle. This would make the ditch on higher ground and prevent water from entering in the spring. The walls form a right angle into which the hive is placed with the back against one wall and the bottom against the other, the entrance being toward the south.

Into the entrance should be inserted a fly-

See that the inch board extends over the tube slightly to prevent the earth from falling down the end and closing it. It is well to clean out a little under the end of the tube, which will make it absolutely sure that there will be no stopping it up in the winter. With a board over the tubes, they were not bent nor stopped up, tho the trenches are on a spot in the sagebrush where sheep are herded and the lambs have great fun in playing on the banks.

And now for the results. I buried the first hive in the garden Oct. 15, having picked it up from the side of the shop a few rods away. The next day was bright and warm, and the bees were at work on the sweet clover and aster. I expected that many of my bees would go back to their old stand, but they all marked their loca-



How Thos. Chantry of Wellington, Utah, buries his bees in the open plains country.

tube made of tin. These tubes are easily made of 15-cent milk-cans. Throw the cans on a pile of weeds and set on fire. Then knock the heads off and pound them into tubes $\frac{3}{8}$ inch in thickness, or just so they will go into the entrance of the hive. In each tube put two small strips of wood to keep the pressure from closing the tube. Drive a small nail thru the tin and each strip of wood at the middle to prevent them from slipping out. This will make three bee-entrances; but with the thumb and finger draw the two protruding sticks nearly together, leaving only a bee-space.

Pack earth around the tube, then lay a 1 by 6 board just so the edge will protrude over the tubes. Set the hives as close as they can be placed together, and over the top put six inches of straw and four or more of earth. After all is done, examine each tube to see that it is not stopped up.

tion and went back to the tube, and for two weeks did good work carrying in honey. Next an apiary of 100 hives was buried on Nov. 1. The weather was warm, and each colony marked its location. Two other apiaries were buried after this date. I went to Denver in December, and was there until March 1. December was cold, with the temperature at times below zero. January was warmer, with a good many days when the bees were busy flying. I was not with the bees, and left no one in charge, for I felt that, whether the days were cold or warm, the bees were all right. March was mild and very wet. We had two snows that were each five inches deep, and heavy and wet. They both went off with a rush, leaving much water. I watched the bees and noticed on level land one trench which was filling with water. I at once lifted the hives and found a few inches of water in them,

FROM THE FIELD OF EXPERIENCE

but no special damage. I took them out soon after, April 1. In some of the hives there was a tendency to mold but not enough to damage the combs. Only two per cent had died—a few of these from foul brood, but not a robber bee had entered thru the tubes. The hives apparently had all the bees and honey they had in the fall. I carried them to their summer position on a cool day, and to my knowledge there was no confusion nor drifting.

This plan of wintering, I have found, has a number of good points in its favor. When there are warm days in winter the hives will not warm up at that depth unless the temperature is such that the bees can take a good flight. In cold weather, with the amount of heat that each hive would give off I do not think there would be a freezing temperature. If they are dry, the bees can be kept where the cold winds will not hit them. The entrance and bank facing the south will absorb some heat. One can leave the bees, and foul-brood hives will not be robbed out. There is no damage from fire, nor of thieves pilfering the combs. In cold weather they would be hard to get while under six inches of frozen ground. This thieving of combs is getting to be quite a nuisance in many localities.

This is certainly a good and cheap method for all dry and cold climates. In warmer and moister climates one must use judgment and go slow. I should like to see it tried in cold climates like the Dakotas and Minnesota, and also some parts of California. I remember visiting an apiary in Berkeley in early spring, and I was surprised to see only a handful of bees in each hive. They probably wore themselves out flying in the winter.

Having the bees down in the ground prevents their warming up; and yet the ventilation being at the top the foul air all passes out. The expense of this kind of wintering is very small. For a hundred hives a ditch nearly 150 feet long will be needed. I had a farmer plow the trench. A helper and myself put in 100 hives in two hours. I then shoveled on the earth at my leisure, but a plow might be used to good advantage to throw the earth up to the back. The tube and work did not exceed ten cents per hive. The saving of honey that the bees would consume might amount to \$7.00. The bees can be put in at any time after the honey flow is over until the ground is frozen. But I prefer putting them down early so they may become settled to their condition before winter.

If the reader wishes to try this on a small scale, a small trench can be dug with pick and shovel to hold a few hives.

Caldwell, Ida.

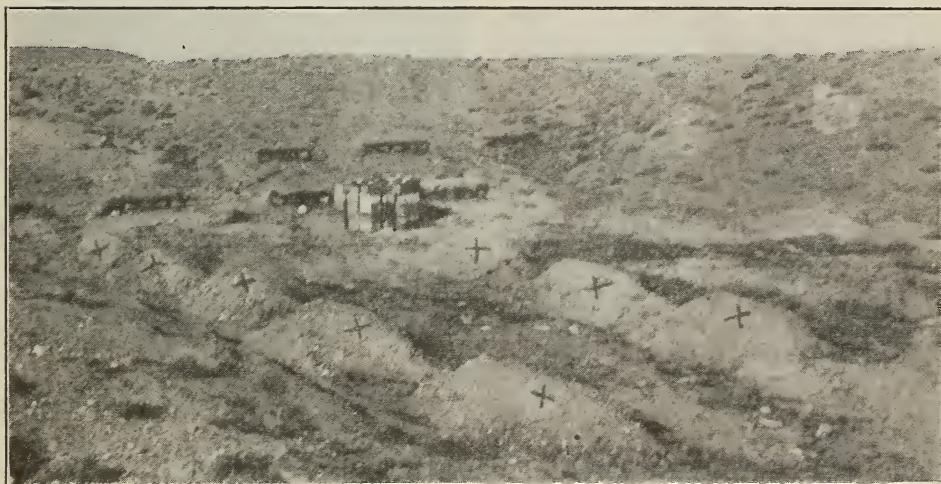
W. L. Porter.

LOW-PRICE HIVE-PRESERVATION

Better Preservation of Hive Parts with Greater Economy

To the man who uses but few hives yearly, the subject of hive-preservation may be of small interest, even with paint at the present high-price level. But to the aggressive commercial beekeeper, with hundreds of new hives and supers yearly, the subject of more economical efficient hive-preservation from the effects of weather is of no small importance.

It is customary, with most beekeepers, to



Ninety-five colonies buried Nov. 1, and only two dead when taken out May 18. Crosses show where bees are buried.

FROM THE FIELD OF EXPERIENCE

give all new hives two or three coats of paint, and there are excellent reasons why three coats may be more economical than two.

A good painter told me some years ago that one reason why three coats are a far better protection than two, is, that if only two coats are applied, the high points on the more or less smooth wood are poorly covered, and soon become exposed to the weather, by the disintegration of the linseed oil in the thin coating of paint which covers them; but, by adding a good third coat, all are so well covered that these high points cannot soon carry moisture into the wood. Here it is well to say, that in most cases cheap paints are a snare and a delusion, and so are substitute oils.

But the best of paints, especially white or of light color, goes all too soon, particularly in the arid regions; and one reason why the best paints hold so poorly on beehives is the excessive moisture within the hive at times, which works thru the wood, swells it, and loosens the paint, both by the stretching incident to the increase of width of swollen lumber, and the tendency to loosen and destroy the oil in the paint by reason of the presence of moisture and air.

Several writers have suggested the painting of the inside of all hives, or coating them inside with paraffin, in a measure to stop the absorption of moisture from within. The idea is a good one.

Recognizing the paramount importance of economy and utility, I have devoted some thought and effort toward a solution of the problem—better preservation of hive parts, with, if possible, greater economy.

Perhaps a recital of some things tried may be of interest and save others needless experimentation. Some years ago, I conceived the idea of immersing hive bodies for a few seconds in boiling paraffin. The hot paraffin soaks far into the corners and ends of the boards, and sufficiently into the edges and the sides, and for about two or three years makes a good preservative, tho the hives for a year or two are rather slippery to handle. The heat of the sun's rays drives the paraffin into the wood, so that in three years the hives look almost as dark colored as those not painted or coated. Where the sun's rays fry the wax into the wood, and largely away from the surface, the surface may be in fair condition to receive a coat of paint. It is possible that there is more or less actual evaporation or disintegration of the paraffin.

Perhaps the hives might be dipped in a thin white paint to give a light color, then when dry dipped to advantage in boiling paraffin. Some have advocated the use of products such as carbolineum, creosote oil, creosota, etc.; but all, I believe, have an obnoxious odor, and all give a dark color unsuitable for single-walled hives.

While visiting Thomas Chantry a few years ago, the writer was told of a formula used somewhat in Utah, and this too was tried here. The first coat is composed of separator skim milk and portland cement; the second coat, of linseed oil and ocher. The hives so painted show fine results in part, but there is a marked tendency for the paint film to scale off corners and edges in large scales. As in cement there is an alkali destructive to paint oils, perhaps the first coat, when dry, could be dipped in a solution to neutralize this alkali, re-dried, and then the finishing coat applied with better results.

Years ago, a "cheap paint" was described in the Review. I lost the formula, but made up something somewhat similar, and boiled hives in it, applying a second coat by hand to the outsides only. They are light in color and the compound may prove good, tho being compounded without any particular knowledge of paint chemistry, etc., it is doubtful.

A former helper, who had worked in a factory where agricultural implements were made, told of their method of painting. The first coat was made by diluting good paint with half naphtha, into which all wooden parts were dipped, the other coats being applied with a brush.

This method of applying the first coat, by dipping into the thin, naphtha-diluted paint, probably secured better penetration of the first coat than is usually secured, and if so, would favor the retention and adherence of the paint film, with consequent greater durability, to say nothing of the saving of time. Even the thin coating of paint, so secured, on the insides of the hives would help in preventing the hive-moisture from soaking thru the wood and destroying the paint on the outside of the hives. As no naphtha is here obtainable, I have been unable to test the plan.

I owe to Mr. Simmins of Texas the economical plan of boiling bottoms or covers in tar or asphalt roofing paints; and all bottoms will be so treated hereafter, as there results a greater saving of time, and, no doubt, the bottoms will be far more durable than when paint is used.

One can use a double flat cover with air-space, as used by Mr. Simmins, a single flat cover with a substantial inner cover, or a telescope lid, preferably of cypress, redwood, or cedar, providing an air-space above a substantial inner cover, and by any of these plans, there is no trouble with the black lids causing overheating of the colonies. If black telescope covers are used with quilts, doubtless overheating will result.

The writer black-boiled 30 telescope covers and then used them in a location entirely without shade, over inner covers $\frac{1}{2}$ inch thick, with a $\frac{3}{4}$ -inch air-space between inner and outer covers, and a ventilating

FROM THE FIELD OF EXPERIENCE

space at the edges, and the colonies showed no evidence of distress or overheating. Telescope lids so boiled need no tin, as the coating is waterproof and can be cheaply renewed.

It is time that the fraternity wake up to the fact, that it is only by a careful study of economy, with improved results, that we can overcome the ruinous handicap of falling prices of our product, with constantly high costs of everything that we use and buy.

The purpose of this article will be achieved if there results some practical study, by paint chemists, of compounds into which (boiling hot perhaps) hive parts may be dipped, coating them in a few seconds inside and out with a light-colored, penetrating, protective film, superior in weather-resisting powers, and perhaps cheapness, to any paint now known. Certainly such a compound can be devised, if the necessary talent can be enlisted, and the times are surely ripe for its development.

Meridian, Idaho.

E. F. Atwater.

DEFEATING THE ANTS

A Unique Scheme Devised by Two Enthusiastic Backloggers

R. B. Calkins of Oakland, Cal., one of the head men in the office of the Western Union in San Francisco, and secretary of the local bee society, is an enthusiastic beekeeper. Indeed, both he and his wife have the bee

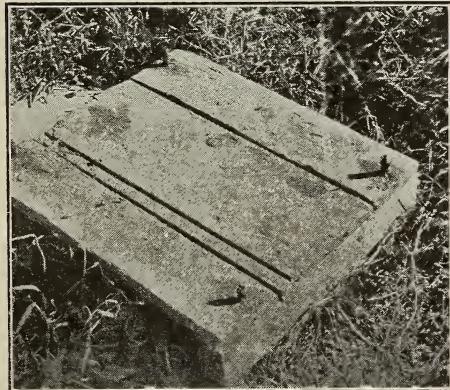


Fig. 1.—The Calkins ant-proof hive-stand. It differs from no other hive-stand except that near each of its four corners it has 20-penny spikes driven in about half their length, and gauged to fit snugly to the inside rim of the reversible bottom-board on each side. Around the projecting portion of the spikes is wound felting which is afterward soaked in axle grease. On top of these four nails is carefully adjusted a colony of bees as shown in Fig. 2. For obvious reasons the alighting board connects with the hive-stand and not with bottom-board of hive.

fever, and have it strong. It is hard to say which one suffers from it or enjoys it the more. Of course, they attended the winter course in beekeeping at Davis, Cal; and so much interested was Mr. Calkins that he took down the whole course of lectures in shorthand, and afterward advertised them,

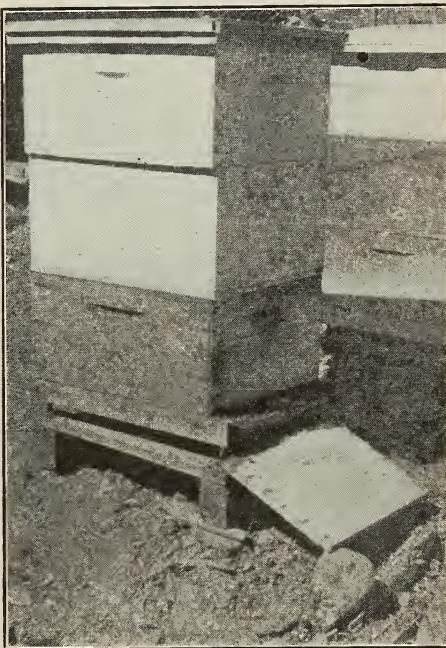


Fig. 2.—A colony of bees resting on four 20-penny nails driven half-way down into the hive-stand. As explained in Fig. 1, these nails are surrounded with felting which is dipped in axle grease, which does not evaporate so readily as creosote, altho the latter would be satisfactory. Ants are real pests in Berkeley. The colonies thus protected are free from any further visitation of their old friends the enemy.

neatly transcribed in typewriter, in the columns of this journal. See his advertisement on page 413 for the July issue, 1919.

In company with Cary W. Hartman of Oakland, Cal., who, with Mr. Calkins, organized the Alameda County Beekeepers' Society, I called at the home of the Calkinses, and while I failed to find them on the first trip I got them on the second. It was a real inspiration to meet them. Verily they seemed to have found the fountain of eternal youth. Mrs. Calkins seems to be the main beeman, because her husband is tied up with his Western Union business.

They have a pretty little apiary located among the eucalypti in the rear of their home yard; and as one takes a glance thru the hives he can not fail to note that some body is bestowing on them loving care, and

FROM THE FIELD OF EXPERIENCE

that person is Mrs. Calkins. Now to the point of my story:

One of the troubles encountered was the small red ants. Not to be outdone by these "pesky things," Mrs. Calkins devised a very unique scheme for keeping the ants from the hives; for it should be remembered that this pest in warm climates is a serious one in some localities. It was particularly so in the Calkins yard, two colonies having been killed by the worrying they underwent before the "anti-ant" stand was perfected by Mrs. Calkins.

How did Mrs. Calkins meet the difficulty? Into the four corners of the regular hive-stand she drove four 20-penny spikes about half their length. Around the portion of the nails sticking out she wound some felting, and this felting was soaked in axle grease. "And now, you pestiferous ants," said she, "if you think you can climb over that axle grease and make more trouble for my pets, I will see what else I can do."

But they didn't climb. The first hive proved the success of her scheme; and it was not long before she had ant-proof hive-stands under every one of the colonies.

I asked, "Mrs. Calkins, how did you get those two-and three-story colonies, heavy with honey, off the hive-stand and put them back again after you applied your ant-proof device?"

"That is easy," she replied. "I waited till Mr. Calkins came home at night and we two did the job together."

Why the two of them? Why did not the man do it all? If you could see Mrs. Calkins you would know she loves to be outdoors, and she shows it in her rugged health. I'll venture the statement that she could lift as much as or more than her other half. She dons her farmerette beesuit, and is ready for anything; even accompanying Mr. Calkins to their summer yard in the alfalfa fields, 70 miles away, in the San Joaquin Valley. Both of them are real students of beekeeping, which accounts for their rapid progress in apiculture. Mr. Calkins showed me a file of Gleanings complete to the very first "windmill" number, dated January, 1873. They believe in knowing what to do before they try to do it.

Mr. Calkins' health has been none too good, but work outdoors among their bees is rapidly recovering it for him.

Medina, Ohio.

E. R. Root.



AN AUSTRALIAN BEEKEEPER

Who Decided to Keep the Prop and Let the Farming Go

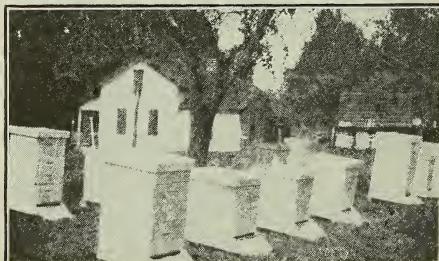
George Rich of Enterprise Apiary, Maryborough, Victoria, Australia, may be said to have been brought up with the bees, for

his parents, having kept bees in England, always retained a few colonies in box hives. As the boy grew up he was considered a wonder at handling bees, and used to remove a good deal of honey for neighbors. He early formed the opinion that beekeeping is more profitable than general farming, altho until 1902 he had never seen a modern apiary. When he did, however, he at once grasped the advantages of movable-frame hives, and the very next day sent for some. Upon their arrival he transferred his bees from the old box hives, and the first season obtained a ton of honey from his 21 colonies of blacks.

The year following he went to Thomas Bolton to learn the business, and spent three seasons with him, after which time he carried on beekeeping along with general farming until he finally gave up the farming to devote his whole time to the bees. This he was largely induced to do by reading Hutchinson's "Advanced Beekeeping," in which the latter wrote that if beekeeping had to be propped up by something else, better throw the bees away and keep the prop. Mr. Rich had been using the bees to prop up the farming.

He is fortunate in being able to say that he has never had a complete failure of crop, tho this is no doubt due to skillful management. His bees are in Langstroth hives and are a very fine grade of Italians, which he has bred up by constant selection. He considers his greatest problem to be the prevention of swarming. His prevention method is to take combs of brood from strong colonies to strengthen the weak, or to form new ones, replacing the combs removed with frames of foundation. As is largely the custom among progressive beekeepers in Australia, his colonies are distributed in out-apiaries and moved from place to place to meet varying conditions.

Melbourne, Australia. B. Blackbourn.



The apiary of T. W. Gentry at King, N. C., is an illustration of how better beekeeping is coming along in that State.

B. Brewster calls me down, and justly too, for injustice to Mr. Alexander in speaking of the matter of leaving the strong colony uncovered for a time before setting the weak colony over it. I spoke of it as something new when in reality it was given by Mr. Alexander himself. Mr. Brewster refers me to Gleanings, 1906, Nov. 1, page 1358, where Mr. Alexander says, "I should leave the strong colony uncovered, except with the excluder, for a few hours before setting on the weak colony." I am ashamed of myself and thank you heartily, Bro. Brewster, for calling attention to the matter.

* * *

"It is time to give supers when the bees begin to plaster bits of white wax along the top-bars." In spite of the antiquity of that rule, I haven't the profoundest respect for it. Unless I am greatly mistaken, those bits of new wax, plastered where no wax is really needed, are an indication that the bees are already crowded for room, and just that far on the way toward swarming. We want to forestall the very first beginning of a crowded feeling; and so supers should be given in advance of any feeling of need for them. In white-clover regions it is a good plan to begin giving supers as soon as the very first white-clover bloom is found opened. Each year I am on a sharp lookout for

STRAY STRAWS

Dr. C. C. Miller

that first blossom, and in many years' observation have always found that surplus storing begins just ten days later. Where there is no white clover I suppose some other flower may serve as a guide.

* * *

I'm not sure I've noticed a case of the kind lately, but years ago I had a good many cases in which, after the introduction of a queen, a good many bees would be found dead in front of the hive. It looked as if there had been two parties, one favorable to, and the other antagonistic to, the new candidate, and a battle had ensued. Perhaps in all cases of the kind the introduction was successful.

* * *

BOTANY BEES.
Full many a tomato plant
Would never blush nor bear,
Without the bee to gallivant
And shift some pollen there.

He travels in the honey line,
But sets the vines aglow;
Which shows the finest things we do
Are not the things we know.

I do not care for honey much,
And yet I prize the bee;
The fair tomatoes that I love,
He makes 'em blush for me.

—Chicago Daily News.

Note: These last "Stray Straws," by Dr. Miller, were written late in 1919, and had been left in the editorial drawer with the hope that the Doctor some day could complete the page.—Editor.

VERY little honey has been gathered by bees in this section since July 20, with the result that a good deal of feeding of sugar will be required to carry them thru the winter. We thought them very well supplied the last of July when supers were removed, only to find some of them starving when looked over in September.

* * *

Some of my largest annual sweet clover plants were cut Sept. 1 to show at our county fair. Some of those left standing are today (Oct. 4) six feet tall and in full bloom, less than four months from seed.

* * *

It is not often that we have an over-supply of pollen in our hives, but when we do, it may be well to test the plan, given by J. T. Dunn on page 615, for getting rid of it provided the weather is warm and dry.

* * *

If it was necessary that there should be another editor for Gleanings in Bee Culture, I know of no one better fitted for the job, or that we should have preferred to Geo. S. Demuth. May abundant success follow his efforts in this new line of work.

* * *

Sweet clover has come to the top as a honey plant in the United States (page 586). A little more than 50 years ago M. M. Baldrige, in the American Bee Journal, first called the attention of beekeepers to its good record and value as a producer of honey. What plant comes next?

* * *

It was a nice thing for Dr. Phillips, E. R. Root, Geo. S. Demuth, and H. F. Wilson to visit Dr. C. C. Miller while he was yet able to receive them and enjoy their visit. It was a good delegation, and we of the ranks who have so often wished to make such a visit may feel that we were well represented, and that the visit was ours as well as theirs.

* * *

The question of the proper temperature of the cellar for bees is quite fully discussed on page 586. Except in a general way it seems a little difficult for the average beekeeper to gauge his cellar by thermometers, but I have thought it a good rule to keep the bee cellar so far as possible at such a temperature that the bees will remain the quietest and with least noise.

* * *

There has been for many years some disagreement among beekeepers as to the bees' needing fresh air and cellar ventila-

tion during winter. The statement is made on page 586 that Government experiments have shown that the value of ventilation consists in controlling the temperature of the cellar and not in purifying the air. This is an exceedingly important matter, and explains the different opinions of various intelligent beekeepers on the subject of ventilation.

* * *

Probably no subject occupies so much space in our bee journals as that of wintering bees, and perhaps no other subject is so important. When we sum it all up the two most important things appear to be the temperature of the cluster and the amount and quality of the food. There is an almost endless variety of ways of maintaining the temperature, which each beekeeper must work out for himself with his own conveniences or with what he has at his command.

* * *

We are grateful to Stancy Puerden for her conservative statements of the food value of honey, page 607. It is well to know in a scientific way the place of honey in a well-regulated diet. Some have claimed that a pound of honey is equal to a pound of butter—a statement which we know to be false. It is a comfort to know that it may be used with bread with decided advantage, especially by those, like myself, who use little or no butter. It is well to know that honey contains many of the elements of nutrition on which our health and happiness depend. We are glad to know also that comb honey can supply what is so necessary to health—the fat soluble A vitamines found in butter, and that honey, to a considerable extent, can take the place of butter in our diet.

* * *

Jay Smith, on page 591, brings out a thought that was new to me and may be to others, that bees compelled to expend their strength the latter part of summer in ventilating their hives waste a good deal of vitality that should be conserved to carry them thru the winter. I believe he is right, and so conclude that it is better to give bees abundant ventilation until late autumn. This season, the last week in September was one of the warmest of the year, and after nearly all the brood had emerged. Had we reduced the entrances when the supers were removed, there would have been quite a loss of labor in ventilating their hives. Mr. Smith is also quite right in thinking that for early brood-rearing there is great value in double-walled hives with abundant packing in early spring.

WHEN I opened the October number of Gleanings and read the first paragraph in Mr. Crane's department I went right up in the air, as my husband expresses it. Let me hasten to explain that I was not in the least annoyed at Mr. Crane's perfectly natural surmise that the reason the fat-soluble vitamine was not found in extracted honey as well as comb was because heated honey had been used for the test. Mr. Crane was and is and probably will continue to be all right, but the editorial staff was—not, decidedly not in my opinion. They should have given me a chance to reply briefly on the same page. One would think their food writer lived in Hong Kong instead of in the same town and within a block of the editorial sanctum. Being of an impatient nature I always dislike to wait a month for a reply, and I will venture to assert there are others who feel the same. There is always the chance too that many will read the question and not the tardy answer.

Let me quote a sentence from Mr. Crane's article to enable you to understand the reply: "But I have been wondering since reading Mrs. Puerden's account of vitamines whether the clear honey used in these investigations was not bottled honey that had been sterilized to prevent granulation, which might be the cause of finding few or no vitamines in honey without the comb."

No, one sample was white clover extracted honey, unheated. The other sample was the blend which is used for filling bottles, heated, not sterilized, only to the point found by long experience to be sufficient to prevent granulation under ordinary circumstances, a point which is nowhere near the boiling point. Boiling honey ruins the delicate flavor. The feeding experiments with the rats showed both of these samples of honey, the unheated and that subjected to a moderate heat, to be deficient in the growth factor known as fat-soluble A.

Altho not necessary in answering the question I might add that recent developments show that the vitamines fat-soluble A and water-soluble B, the vitamine which is found in minute quantities in extracted honey, are comparatively little injured by heat, but the anti-scorbutic vitamine, known as water-soluble C, is quickly injured by heat.

But even tho it seems to be a fact that the fat-soluble vitamines are in comb honey only I am inclined to agree with Mr. Crane that it is doubtful if they are in the wax itself. In writing the article it seemed best for me to report Prof.



Hawk's findings without comment, but I cannot help feeling that nature, our inadequate word for the supreme Intelligence who directs the universe, would not waste those vitamines on the wax, which is not a food for the bees but contains their food. It is probably presumptuous for me to say so, but I wonder if the vitamines in comb honey may not be so volatile that they are lost in the process of extracting. We are told that they are probably ferment, and isn't it reasonable to suppose that they might speedily evaporate when removed from the comb and exposed to the air?

If some of you recall the story, told on this page, of the general manager of a chain of theaters who recovered his health on an almost exclusive honey diet, you may remember too that he stated that he had to eat comb honey, that he did not receive the same benefit from extracted. But he also said he rejected a large part of the comb.

After the above was written and set up in type, information came to me that a certain famous sanitarium, which effects its cures entirely by means of diet, sanitation and exercise—no medicine whatever—serves no sweets to its patients except honey. I hope to be able to tell more about this in a later issue.

Before I leave the subject of vitamines, and please remember that Mr. Crane and not I introduced it this time, I wish to call your attention to an interesting article on the subject in the issue of the Youths' Companion for Sept. 23. It was written by Dr. C. W. Saleby, F. R. S. Edin. F. Z. S. (my typewriter fairly choked over all those fine sounding letters). Every bit of it is valuable to mothers or others who plan food for their families, and yet it is written in a style easy to understand. The paragraph which I am going to quote might be termed a concentrated argument in favor of the eighteenth amendment:

"Beer is remarkable because, tho it is derived from materials rich in various vitamines, no vestige of any vitamine survives in it. Indeed, for us in many parts of Europe beer must be reckoned the most common and nationally important example of a preserved, artificial, and—because deprived of vitamines—devitalized 'food.' This I must insist upon because the contrary has been asserted by some writers, not men of science, who have heard that malt and yeast are rich in vitamines, but who have not thought it desirable to ask themselves what is likely to happen to those delicate agents when treated as the brewer treats 'them.'"

“WHAT’S in a Name?” Several years ago, when one of the editors of Gleanings engaged me to write for this department, I decided on a pen name for this reason:—I wanted to see if I could win a little place in the hearts of the Gleanings readers which was all my own, a place which was not given me because they knew my father, my brothers, or my husband.

Notice by comparing the names at the head of this page that I translated the first syllable of “Boyden” into Latin, converting it into Puerden. Doubtless my former Latin teachers would have been surprised and pleased had they foreseen that even one Latin word would stick in my memory. For the first name I resurrected a seldom used and almost forgotten nickname, “Stancy.”

The many cordial and appreciative letters which have come to Stancy Puerden in the past three years encourage me to believe that I have won that coveted corner in the hearts of at least a part of the readers, and now having proved my point I am going to write under my everyday name hereafter.

To tell the truth, in addition to a desire to be perfectly open and frank with my friends—I never could keep a secret—there are other reasons: The pen name has proved to be somewhat ambiguous, for I have received many letters and at least one telegram addressed to “Mr. Stancy Puerden.” The inference that I have a masculine style of writing may be flattering, but there were times when it was a bit embarrassing.

The pronunciation and spelling have seemed difficult too, for my brother always cheerfully mispronounced Puerden, and my own husband has been known to misspell Stancy. And in the October issue of Gleanings the name appeared “Stancy Puerden.” Did the type break loose or are they trying to canonize me before I am dead?

And last, but not least, our oldest son, who will be twenty-one Nov. 2, just in time to cast his vote in a presidential election at the same time his mother has that privilege, is much interested in the chemistry of honey and wax and has written some articles along that line, and naturally I like to be known as his mother, especially as we have been invited to write a book together.

JELLIED MEAT:

3 lbs. beef, veal, or chicken	1 tablespoon vinegar
	salt
1/2 small onion	2 tablespoons granulated
1 clove	ed gelatine
	water

Heel piece or forequarter beef may be used, but any lean beef, chicken, or veal will answer. Cover the meat with boiling water and simmer slowly in a tightly covered kettle, seasoning with salt when about half done. It may be cooked in a steamer or fireless cooker. When done, remove

from the broth and cool. Remove fat from the broth, by cooling if necessary, add the onion and clove and boil down to about 1 1/2 cupfuls. In the meantime cut the meat into very small pieces and put in mold; a bread pan will do; measure 1 1/2 cups of the broth and add to it the gelatine which has been softened in 2 tablespoons of cold water, the vinegar and more salt, if necessary, pour over the meat and put in a cold place until firm, when it may be turned out on a platter and garnished with parsley. This is an economical and attractive meat loaf for picnics, church suppers, etc.

CORN CHOWDER.

1 cup corn	3 tablespoons butter
2 cups diced potatoes	3 tablespoons flour
1 onion	salt and pepper
1 pint milk	3 cups water

Dried corn may be used, in which case soak it over night before measuring and use the water in which it was soaked. Put the water and onion sliced thinly on to cook and when the onion is nearly done add the cooked potatoes and corn and cook five minutes longer. Make a white sauce of the butter, flour, and milk, blend with the other mixture, and season to taste with salt and a bit of pepper. Finely minced parsley may be added just before serving.

GOLDEN SHERBET.

1 qt. fresh milk	1 cup canned shredded
1 pint stewed apricots	pineapple

1 cup honey

Either canned or dried apricots may be used. The latter should be soaked in water to cover several hours or over night and then stewed slowly until tender, and as they are not sweetened a little more honey may be needed. Put the apricots thru the food chopper and combine with the pineapple, using the juice of both. Add the cold milk slowly to the fruit, stirring constantly and freeze.

PEACH CREAM PIE.

1 pastry shell (baked)	2 eggs
peaches	2 tablespoons water
2/4 cup honey	5 tablespoons flour (level measurement)
1 1/2 cups milk	1 tablespoon butter
2 tablespoons pulverized sugar	1/8 teaspoon salt

Line the pastry shell with sliced peaches, heat the milk with the salt in the double boiler, reserving enough to mix the flour into a smooth paste for thickening; beat the egg yolks slightly, stir in the honey and pour the thickened milk over them, stirring until smooth, return to the double boiler and cook until it is a smooth, thick custard, add the butter and pour over the peaches in the pastry shell. When cool, cover with a meringue made of the egg whites beaten with the two tablespoons of water and sweetened with the sugar, and bake in a slow oven until set and delicately browned. The addition of the water makes the meringue much thicker and fluffier, especially if it is beaten with a wire whisk. The meringue may be flavored with a drop of almond.

METHODS of wintering differ widely, even among commercial producers, and still more among sidelineers, who undoubtedly run

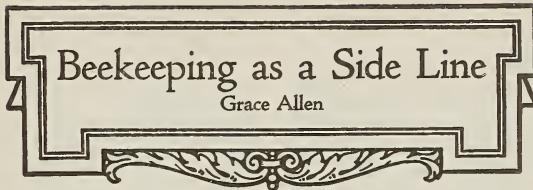
the whole gamut from the best to the worst. You see, some people who keep bees as a sideline are so busy, so constantly busy with their own work that the bees receive but scant attention — sometimes none. Others, with a main work that leaves them considerable leisure, may spend most of it with their hobby in the back yard. In this class we naturally find some of our most skillful beekeepers. Individuality and personal bias probably show more strikingly among backlanders than among professionals. And in this matter of wintering, how we do differ, from doing nothing at all, not even attending properly to stores, to the most laborious and expensive methods of packing.

Midway between these two extremes stands Geo. Bowersox of Portland, Ind., who says his method is a complete success — with him. He uses small, single-hive packing cases, with an air shaft from the entrance, which is reduced to $\frac{3}{8}$ by 4 inches. I can't see, myself, much value to this air shaft, and wonder if he wouldn't have as good results without it. "Get the bees in shape early, as to stores," he writes, "and give them plenty of time to seal down the cover good and tight. It is my opinion the Lord aimed for them to have a tight sealed roof, or he wouldn't have made them quite so handy with the glue-pot. Put newspapers on the hive, and crowd on outer cover. Set hive on platform, no packing under it at all. Put winter case down over all. Pack with hay or long grass. Put cover on and entrance block in place. Tip the whole outfit up four inches at the back. Don't fail in this. I think the tipping at back and the air shaft are the secret of the success. I wintered 100 per cent this year, as usual. I never lost a colony from wintering in my life. There are lots of things I have never seen, and two of them are moldy combs and dysentery."

* * *

While we were working hard the Saturday afternoon before the State Fair, putting up our exhibit, there came strolling along a man with apparently nothing to do, but considerable to talk about. He drew up a chair, settled down and soon had a little group gathered into a sort of round table discussion of things in general. Bees were merely introductory. The story of his entire experience with them ran somewhat like this.

"A good many years ago, when I had a big farm in East Tennessee, a man came



to me one spring and asked if he could put some bees on my place. 'Ask my wife,' I said, 'If she doesn't care, I don't.' Wife said it would

be all right so's he didn't put them too near the house. So he put 'em out the other side of the orchard. Well, I had a nigger'd worked for me for years, and pretty soon he began to kick about the bees. 'They sure is cross bees, Boss,' he said. 'Is they yours?' I told him no, they belonged to another fellow. He kept on kicking about them for a good bit, but after a while he quit. I never paid any attention to them myself, just managed not to go around where they were. Along in the summer sometime I asked the nigger if the bees had quit bothering him. 'Yes,' he said, 'they's right quiet now.' Sometime in July the owner came driving out. 'Did I get any honey?' he wanted to know. 'Blest if I know,' I told him. 'Go on out and see.' He went out, and he came back. 'Who killed all my bees?' he wanted to know, and he was good and mad. 'What you mean, who killed your bees?' I said back, right quick. 'There's not a live bee out there,' he said. And he was right about it. That rascal of a nigger had gone out there at night and packed the opening of every hive full of wet mud, and smothered every bee. I just couldn't help it, I had to laugh to think about it."

There may have been a humorous angle to the incident, but needless to say our sympathies ran along a different line than our narrator's.

There were two hives of live bees in the apiary section at the Fair, one of them in our own exhibit. On Thursday evening, the superintendent of the Agriculture Department came to us to say that the Fair management was having a most embarrassing experience with the bees flying around the grounds, and wouldn't we please shut them up? The Chero-cola men and the cider men were the angry hosts of great swarms of them, he said, and declared they wouldn't pay for their concessions if the bees weren't called off so they could do a normal business; the women selling lunches complained that bees were eating all the meringue off the pies and frightening customers away, and people were getting stung and threatening to sue the Fair management. We replied that full colonies of bees were among the entries listed in their catalog, last year as well as this, that there were only Italian bees flying from the exhibits, whereas there were plenty of blacks and hybrids around the pies and cider, that there were only two hives being shown anyway (except the one-frame observation hives, which were closed), whereas about a

mile away was one apiary of 20 colonies, and there probably were still others around, and that bees thought nothing of flying a mile or two. However, we shut them in, partly to show that they were not chiefly responsible, and also that the Fair management might assure complainants that they had done what they could, and that there were no bees flying from any exhibits. Friday and Saturday the bees were as thick as ever around the different eating and drinking stands. One excited man and one much worried pie-lady came to me Friday morning entreating me to whistle my bees home to their hive. Distressed tho I had been the night before over having to confine them for the next two days, it was really a satisfaction to be able to show my complaining visitors that not any of our bees, nor any in the entire aparian exhibit, were flying.

They really were troublesome, tho. I felt particularly sorry for the little girl who was stung in the mouth, even tho she may have been eating her pie not daintily, but too fast. But no one felt much sympathy for the woman who stormed the office with the threat of a lawsuit because a bee stung her, or for the plump and healthy young girl who, because her stung hand swelled in a perfectly natural way into a thing of no beauty and some discomfort, called the family doctor the next morning and wore her hand in a bandage for still another day! But I don't think full hives of bees will be included among the entries next year.

We were particularly proud of the placing of that hive of bees, too. The fourteen-ounce bottles of honey—and all the honey in this section was very light and pretty this year—were ranged along on shelves across the windows at the back of the booth, with a clear, empty space in the center large enough to show easily the hive of bees placed just outside on a little platform that brought it to the right position. The hive was close to the window glass, and facing it, so that the entrance showed plainly, with the bees flying in and out (until Friday!), and it was a most pleasing feature of the exhibit. We had wished we might confine the exhibit to one hive and its product, but as it takes about 200 pounds of honey to make a creditable display, and our two highest records were 95 and 110 pounds, we exhibited one of these hives and the output of the two. On the front of the hive, where it faced the window, was a sign reading, "This hive, and one other, produced all the honey shown in this exhibit."

It certainly proved an interesting feature. "Your beekeeping friends will laugh at you," warned Mr. Allen, "if they think you're boasting about that yield." (It was his idea, by the way.) "Let them laugh," I retorted. "This exhibit's not for our beekeeping friends. It's for the general public. And the general public

won't laugh, it will gasp." Gasp it did, too. "All this honey?" it cried, and called its wife and children to come look. Part of it, however, said "Hm!" skeptically and shook its head and walked away, unbelieving.

And still, as always, we pointed out the queens in the observation hives, and assured everyone that the round yellow cakes were not cheese, but beeswax, and that there was no such thing as artificial comb, and that "the honey you buy at the stores" is pure, and what they got once from Alabama was sweet clover honey and not glucose flavored with vanilla and cinnamon, and that beekeepers don't feed sugar to their bees to be made into honey.

* * *

How almost unbelievable it seems that Dr. Miller has gone. He was so alive. And so wholly our beloved leader. I shall never forget that day in Chicago when I met him. It will always be one of my great days. I was quite too stirred to speak, just held to his hand and said his name over two or three times and looked at him, while he himself said so sweet a thing in greeting that I have folded it away among my precious memories. He was just what I knew he must be—only more so—wise and witty and sweet-smiling and gentle-mannered and keen and old and young and winning and lovable. Dr. Phillips assured us later that Dr. Miller's was the youngest mind there. And now he has gone. Gone? We all know his own strong faith in a finer, nobler life to come. And even here on this earth, in the hearts and affectionate regard and reverent esteem of countless men, he will have achieved something akin to immortality. For over all this world, wherever men love bees and read books, his name is known and loved and will be passed down thru the ages.

* * *

IN MEMORIAM.

DR. C. C. MILLER.

How you would love this hour! The morning mist, All touched with gold and blue and amethyst, Goes rising slowly, lost somehow in light, And lo, the sun-tipped hills break into sight! Does Death come so? Do tender earth-born things And human love, however close it clings, Dissolve at last and rise and pass away And show great hills of light, and God, and Day?

The golden peace of autumn lies around. You loved it, too, and most, perhaps, this sound Of bees that hum, whose frail undaunted wings Fill wondering souls with strange imaginings. Is peace around you now, so great, so deep, That we who do not know it call it sleep? Are wings there, too, God-made of dream and fire, That leave ungarnered no divine desire?

Today this earthly beauty grips me so I wonder what new radiance you know. Such haunting music fills our quiet places—What symphonies ring down unbounded spaces? Not ours to ask—ours but to dream the dream, Ours but to keep the high-held torch agleam. Ours but to walk in reverence and pride Because you lived, and loved, and smiled, and died.


FROM NORTH, EAST, WEST AND SOUTH


In Southern California.—The return trip from our delightful outing in the mountains of Tuolumne County was made via the coast route. We motored the 550 miles toward our southern California home by easy stages. Along the way we were very forcibly impressed by the changes in the climate, the variety of crops, and the different sources from which honey might be obtained. From the higher altitudes of Tuolumne County where very little is found for the bee to work upon, we descended to the lower valleys where irrigation brings forth a variety of honey-producing plants, among them alfalfa, sweet clover, wild sunflower, and many weeds and vines. As we travelled farther toward the coast, we found the climate growing cooler. Willows were very abundant, and many beekeepers are quite dependent upon them. A very dark grade of honey, classed by the State Exchange as River Bank honey, is gathered in this section. It is sometimes called bug-juice by the native beekeeper. I understand it is not honey at all but a substance called honeydew, and is produced by an aphis. This honeydew sometimes continues to be produced until late in the fall. Queen-breeders find this an ideal place for late queens on account of the late flow.

A little farther south we found great black sage ranges together with fruit bloom, mustard, etc. Then a hundred miles or so farther on our way, we began to see the unirrigated bean fields which soon broaden out into the thousands of acres of Santa Barbara and Ventura counties. This has not proved to be one of our best bean-honey years, and many beekeepers felt that they were well paid if the hives were well filled for winter. These fields are backed, as it were, by the great purple sage ranges some 30 miles away in the hills. The season has not been good on these ranges and only a few have made a good crop this year. Another hundred miles brings us to the great irrigated bean fields of the San Fernando Valley of Los Angeles County. Here more honey has been produced, and some apiaries have done very well.

One very noticeable thing along our travels was the ever increasing number of "Honey for Sale" signs. More and more the beekeeper is beginning to realize that the more honey he can sell at retail, the more nearly he is getting what he should have for his product, and at the same time the use of honey in the home is being stimulated.

During a trip over half of the length of our State, the writer was surprised to notice that the places where a good crop of honey was secured are very "spotted." It so happened that our section was favored this year, and it is more than likely that other parts will be the ones to get the good crop

next year. In some parts of the country the blue curl is very abundant and is yielding enough honey so that some might be extracted. In our immediate vicinity, it has given little or no honey. While it is considered a drought plant and grows in the grain fields after the crop has been taken off, yet it seems to be doing its best this year in those places where there were one or two good showers in July or August. I do not know whether all parts of the country have the increase in the bees that ours has, but there are something like 1100 colonies now on a fall range where there were formerly only about 300. This might not make any difference during a heavy honey flow, but it certainly has made a difference in the amount of honey put in for winter stores.

There is considerable activity in the buying of bees. Not many are being offered, but those that are, soon find a buyer if the price is at all reasonable. From twelve to fifteen dollars per colony for two-story Langstroth hives with stores enough for winter, is the general price.

The State Exchange quotes the prices of honey the same as those established in June, 17½ to 20 cents per pound, according to the grade of honey. The sales of honey in bulk have been light but satisfactory, while the package honey put up in 1-pound, 2-pound, 5-pound and 10-pound cans have found a very strong market.

Corona, Calif.

L. L. Andrews.

* * *

In Pacific Northwest.—There are many newcomers almost daily looking for locations. Most of them seem to be fair and do not want to encroach on territory already occupied. Many good locations have been given up, owing to the difficulty of access. Some of the extensive tracts have been logged-off and the logging railheads dismantled, making it too great a hardship for those who at one time could utilize these roads and get supplies in and honey out for a small consideration. The most accessible locations are fairly well filled up, and one finds bees all thru the mountains where none were expected—not in large quantities, but from a few colonies to a few hundred.

1920 has more than ever demonstrated the value of queens, and while a few years ago a queen was considered good and sufficient if the colony gave a fair surplus in an 8-frame hive, such 8-frame queens now are not satisfactory. Those who know, want a 16 to a 20-frame queen. I still am firm in the belief that a good deal is charged up to delinquency of queens that rightfully may be the fault or carelessness of the owner.

Owing to the rapid spread of European foul brood the last two seasons, whole api-



FROM NORTH, EAST, WEST AND SOUTH



aries have been requeened and with more or less success. This does not say that foul brood has gone for keeps. I am inclined to doubt it and expect more or less recurrences; but I do know of individual instances of some few colonies remaining clean and immune thru the whole season, while 99 per cent of the apiaries were more or less infected, and this is the characteristic we want to perpetuate.

By the way, while on the subject of queens advertised, some describe and offer, "Untested, select untested," etc., etc. I have had occasion to send for a goodly number at a time and to many queen-breeders—always to those advertising as untested. Some breeders on receipt of an order write back they have select untested only and will fill the order if the added price is remitted. Still their advertisement appears in bee journals offering untested. Some might construe this as a hold-up and blame the queen-breeder; and it seems to the writer that the breeders of queens cannot afford to send out any but good ones, and, if the brand of untested are inferior, they should advertise them as culls. In the last two years hundreds of untested queens have been bought, and most of them have proved good and some more than good. The best queen on the place one time was just a plain untested one. So much for select and graded, and I am wondering whether the big advertisers can put it over all the time. 25c advance—\$25.00 when sending for a 100—many nice orders have gone to others that don't quibble; and not only that, when other beekeepers ask where you purchase, these breeders are not recommended or endorsed, but a warning sends the order to others. Our experience has been that southern-bred queens are in no way inferior to northern-bred. Purchasing over 300 this season and from many different breeders in different States, I find some strains do show more "pep" and "get-up" than others.

Portland, Ore.

E. J. Ladd.

* * *

In Southern Indiana.—Since writing for this department in September Gleanings, a great change has come over the weather. Probably the sun turned the other side toward us and focused one of those "spots" on us. At any rate, after that hot dry spell that cooked all of our splendid bee weeds it began to rain. There was a nice little shower every night, and nice, clear days. How the smartweed did brace up in the cornfields, and the beautiful Spanish needles stretched themselves high above the wheat stubble. We had about begun to believe that the rain had counteracted the effects of the dry weather and that we would have a fine fall flow to fill the hives,

but the rain did not seem to know when there was enough, for it continued to rain harder both day and night for the latter part of August and all of September. At last the rain stopped, but too late to save the honey crop, for the flowers were past their nectar-secreting stage. Nothing is left but asters, and the bees must be doing quite a business on them, judging by the smell that permeates the atmosphere for a good distance around the apiary.

Colonies that had large brood-nests have abundance of stores left over from the sweet-clover flow. The colonies with small brood-nests, especially those run for extracted honey, are short of stores and must either be fed or will starve.

The demand for honey seems to be good. Extracted honey sells readily at 30c per pound and comb honey at 40c per section.

Owing to the efficient inspection service, foul brood is being eradicated in many localities. Beekeepers' clubs are increasing in number; auto tours by the inspectors and education among the beekeepers are doing much to stamp out bee disease and prevent its spread to new localities. The heavy rains have made the clover come on in fine style, and at present the prospect looks good for a crop from alsike and white clover; still, it is mighty risky guessing on a honey crop a year ahead.

Vincennes, Ind.

Jay Smith.

* * *

In North Carolina.—The season for honey production in Eastern Carolina has been very satisfactory for nearly every beekeeper, especially those who are using standard hives and are giving their bees anything like a reasonable amount of attention. The reports from the western section of the State where the sourwood and the poplar are the main dependence indicate very good results. So that North Carolina may be said to have realized a very fair crop of honey, with the bees generally reported as in satisfactory condition for the coming winter.

Wintering in this State is altogether an out-of-doors problem—no basement storage. However, winter packing is coming more and more into favor, with a view to helping the bees to a decidedly stronger condition in the early spring in preparation for handling the earliest honey flows. Very few beekeepers pack all their bees as yet; but more and more of them are packing many of their hives.

This year's product of honey has been especially choice where it has been produced in standard hives and handled with extractors and other latest appliances, and the tints and the flavors are of the finest. Eighteen to twenty cents per pound seem to be the prevailing prices where the beekeeper sells his crop in bulk, and relatively




higher prices are being obtained where the sales are in small lots and special packages to dealers or consumers. The gum and box-hive beekeepers are getting only 12½ cents per pound for their "squeezed" honey, and their realization of this big difference in the market value of their product is helping mightily to quicken serious thought on the necessity of getting the bees into standard hives and giving them proper attention.

The gum and box-hive beekeepers had another "food for thought" coming to them this summer in the fact that the late August scorching sun melted down many combs, entailing not only the loss of bees and much honey, but endangering entire apiaries thru consequent robbing. At the same time there were apiaries with standard hives that took the hot sun with perfect safety—this in spite of the fact that the standard hives would be right out in the open without shade and the gums and box-hives in neighboring bee yards had board shelters or other extra covering.

Announcement is made in Gleanings that honey is proved to possess that elusive and most vitalizing property, vitamines—the growth principle—thereby adding yet another powerful claim that honey has for place on every well-balanced as well as bountifully supplied dining table in the country. This greatly enthuses the North Carolina beekeepers and stirs them to extra effort to get their delicious product more generally and more forcibly before the public as a real food necessity, as well as a most appetizing and healthful sweet.

The most general preparations for exhibits of bees and honey are under way for the State fair at Raleigh, and many of the county and district fairs are coming in for special displays that are accorded premiums and special prizes.

Wilmington, N. C. W. J. Martin.

* * *

In Ontario.—A busy season is fast drawing to a close and beekeepers see a breathing space ahead in near future, for apiary work in our part of the country is pretty well over by November 1. Personally we have had the busiest season we have ever experienced, not necessarily because of very large crops, but more bees were handled than in other seasons, and the lateness of crop also crowded things quite lively in an effort to get whiter honey off before buckwheat yielded. Each season has its peculiarities and the past one was no exception. Alsike has always been our main source in the home section, but this year, like last season, it yielded little nectar. When hopes were about abandoned for a crop of white honey, sweet clover, grown for first time in quantities around our apiaries in the home section, yielded very bounteously—in fact, at

two yards we got record crops so far as our past experience is concerned. Buckwheat later was a failure, but red clover gave us the first real surplus we have ever had from that source. Then again, at five yards southeast of Hamilton where alsike is also grown in abundance and is the main source of honey, here as at the home yards it yielded little honey and things looked bad indeed for a while. But for the first time in our experience, alfalfa gave us a surplus of about 60 pounds per colony. Surely, as I have often claimed, beekeeping is a gamble all right. From general reports from over the Province, I am inclined to believe that the crop is much better than we thought at close of flow, as many localities where clover failed secured a nice surplus from basswood later on. Prices seem to have a downward tendency, largely caused by quite heavy importations of New Zealand honey, which is being laid down at a price much lower than our product was bringing. Then again, there is that feeling that "anything may happen," and dealers are very loath to buy large supplies even at prices they are willing to pay for small lots. As a consequence, very few have disposed of the bulk of their crop, at date of writing. Buckwheat is particularly slow of sale at this writing, many dealers refusing to quote at all.

As to the sweet clover situation, hundreds of acres are sown all around us here in York and Ontario counties for another season; but, owing to a great slump in sweet clover seed prices, it is doubtful as to what will be done with present acreage. Some predict that most of it will be either plowed under or used for pasture next summer, and in either case it does not look as tho the bees will profit much from it another year. Possibly we have had our first and last crop of sweet clover honey. As to quality, I for one do not like it nearly as well as real good alsike or white clover, but many fortunately do not agree with my taste and think it is fine. Anyway we thought it fine this year when alsike failed, as it stepped in and so generously filled up the supers for us.

It is announced that the Ontario Beekeepers' Association will hold the annual meeting at Guelph late in the year. This will be the first time for many years that it has not been held in Toronto. The opening of the new apicultural building at the Agricultural College is the announced excuse for changing the place of meeting. What comment I have heard so far from beekeepers is not very favorable to change, as fear is expressed that the hotel accommodations will not be adequate. But, no doubt, Sec. Millen will do his best to see that such fears are unfounded.

Markham, Ont.

J. L. Byer,

HEADS OF GRAIN FROM DIFFERENT FIELDS

Four Colonies from One Bee Tree.

From about the first of the year I stimulated lightly a colony of bees in a bee-tree; and, by observing closely, I timed quite accurately the cutting of the large spruce tree before the bees were ready to swarm. When the tree fell the combs collapsed, and the honey poured from the knot-hole entrance and ran down thru the marsh grass some 10 feet into the salt water of the Pacific. Upon opening the tree I found a large cavity which was full of bees, comb, and honey. I obtained about 40 pounds of honey and several frames of comb containing queen-cells and brood in all stages, and enough bees for four 8-frame hives.

I gave the mother queen to one, an Italian to another, and to the other two the brood from which they drew 56 perfect queen-cells, there being 30 good ones on a single comb. I put in division-boards and put on excluders and supers of drawn combs. I also made a brooder for the queen-cells, and by dividing and grafting I obtained queens galore. Immediately after getting my bees I was offered \$10 per colony. Perhaps I did not proceed in an exactly orthodox way, but I made it work just the same.

Raymond, Wash.

M. C. Osborne.

Bees Kept in Town for Twenty Years.

I keep my bees right in the village of Dolgeville on the bank of the East Canada Creek. I have kept my bees there for the last 18 or 20

years without any trouble to anyone. I have an up-to-date outfit. In fact, I have to have such, for I have been in the meat-market business for the last 20 or 22 years and keep the bees as a sideline, and, therefore, don't have much time to spend on them. So I find an up-to-date equipment very important.

R. C. Ortlieb.

Dolgeville, N. Y.

A Queen Travels for 65 Days.

In a letter received from Arcadio Davalos, Zamora, Michoacan, Mexico, under date of Sept. 23, is

the following:

"Only three days ago I received the two Italian queens which you sent me on July 17. One arrived alive, at which I was greatly astonished."

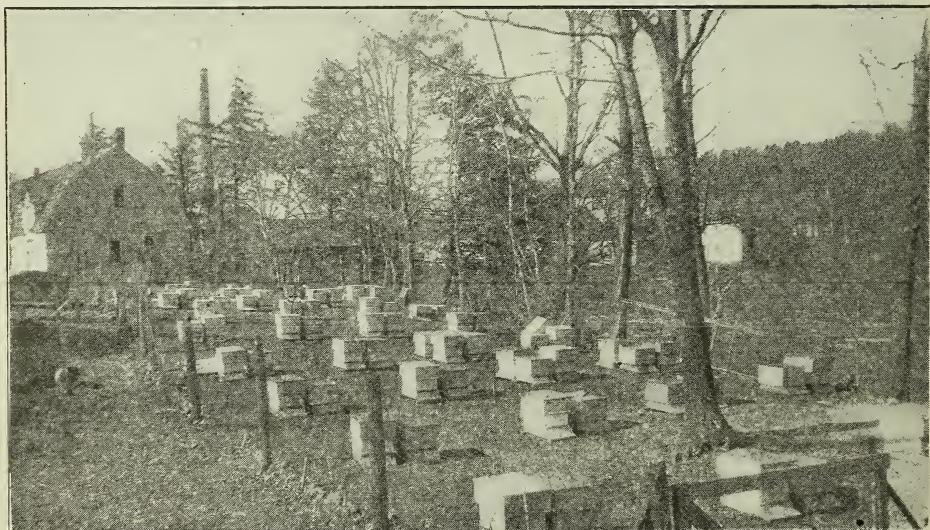
These queens were sent by mail in the ordinary Benton cage, and were 65 days in transit. Going as they did thru the most tropical part of this continent, and at the hottest time of the year, I consider this a most remarkable record.

Medina, Ohio.

M. T. Pritchard.

Advocates Pearson Method

^{**} Pearson method of using shallow frames with foundation starters under the brood-chamber for swarm prevention (June Gleanings, 1919) seemed so reasonable I decided last spring to give it a trial. I arranged seven hives according to directions, and the re-



Mr. Ortlieb's town apiary.

HEADS OF GRAIN FROM DIFFERENT FIELDS

sults have been very satisfactory. Two swarms came from one hive, but not any from the other six. This one hive was not fitted with a super above and below as early as the others, not indeed until burr combs appeared on top of the brood-frames. No work was done by the bees in the shallow frames, with a single exception; this was filled with heavy drone-comb with a very little honey. These combs instead of being parallel with the frames ran diagonally with them. The total amount of honey was very much greater than ever before. I shall continue the same method next season.

Robert Forsyth.

Claremont, New Hampshire.

Supersedure of Apparently Good Queen. Early in the spring I found two queens in one hive. One had a wing clipped, and the other not. Of course I thought (and I believe correctly) that the one with wings had got lost from another hive. So I hunted until I found a queenless hive and took the clipped queen and introduced her into it. Soon after she had a supersEDURE cell started. Thinking it proper, I left the queen-cell to hatch. A fine young queen came forth and later began laying, and still the old queen kept right on with her business.

About Aug. 3 I raised the brood to a third super and put the young queen in the upper super with a queen-excluder between. In about three weeks, when I had actually forgotten about it, I happened to be overhauling the hive and found the queen above, laying as nicely as you please, and below I found the old queen laying finely but with a virgin queen for company. Really I have a very tender feeling for this queen and wish we might reproduce a breed like her.

Crane, Mont. Myron Pickering.

[Quite likely the queen with clipped wings was being superseded at the time of your first observation in the spring. — Editor.]

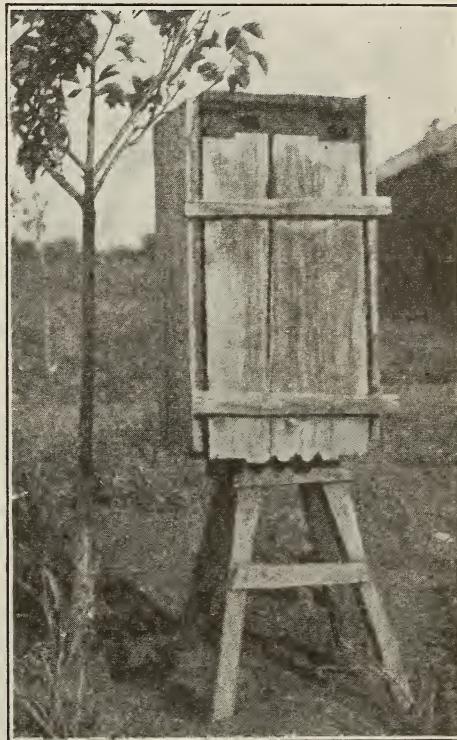
Several Uses For Propolis. Propolis, altho not of great importance, nevertheless has its place in the economy of the hive. Especially in the box hive, or in the natural dwelling-places of bees, it is an ideal material for closing cracks, and has the great advantage over wax in that it does not shelter the wax moth. Moreover, propolis is often used by the bees to fasten the naturally built combs, which certainly is a proof that it adds to the solidity of the comb.

One winter I bought a box hive which had previously had a 2 by 11½-inch space across the front. This the bees had closed completely with a solid sheet of propolis.

Later on in the spring they apparently wanted more ventilation, for they made three holes in that propolis wall, as shown in the illustration.

On the whole, most beekeepers consider propolis as a nuisance, and, indeed, little use can be made of it. As grafting wax, however, this material gave me quite satisfactory results. Adding some tallow might improve it for this purpose.

Propolis has also been used with success in the treatment of corns. After taking a warm footbath, some warm propolis is placed on the corn and covered with a



Bees make a propolis wall.

small piece of cloth and left over night. This has to be repeated several times till the corn comes off.

A propolis soap is offered for sale which is beneficial for the skin on account of the medicinal properties of propolis.

Sometimes propolis is also used as a household remedy, and applied on abscesses and ulcerous wounds. Even the Roman writer Varro reports that propolis was often sold on the honey market in ancient Rome at a higher price than honey, on account of its healing properties.

Buenos Aires,

Ernest Tschudin.

HEADS OF GRAIN FROM DIFFERENT FIELDS

Best Time for Organizing Counties.

The outstanding feature here was the difference between this year's display which filled a good-sized booth and held the interest throughout the week (Sept. 13 to 17), and the display of only a small showing of honey and supplies in previous years. This gain is due to the beekeepers' county organization, which is a little less than a year old. From an exhibit of only two or three entries in the past it jumped this year to about a dozen entries, and the competition was very keen and interesting.

The large exhibit was a surprise to the Fair association, and therefore it was not prepared to give us judges who were experienced in judging honey in the most approved and up-to-date methods; but I doubt if any method used, from laboratory tests to judging from taste and color, could have been other than confusing to the best of judges, as out of nine entries in light spring extracted honey, no difference could be distinguished in color and flavor. Right here I want to tell you how the first and second prizes were awarded. The judges, after several trials at tasting and comparison of color, were very much confused as to where to place the awards, when at this moment a fly, alighting on a small quantity of

An exhibit of beekeepers' products and supplies at a fair is no remarkable event, but the

honey poured out on paper from each jar of honey, insisted on alighting on the same drop of honey after several attempts at driving it away. This recalled to mind the story of the wisdom of Solomon and the test placed before him by the Queen of Sheba; so the judges agreed to give the first award to the entry of this particular jar of honey, and the second prize to the honey on which the fly next alighted. This way of awarding the premiums, while a little out of the ordinary, was nevertheless satisfactory to all concerned. Our association having been organized last fall after most of the orders for spring supplies had been placed, we thought it useless to try collective buying until this fall; but, after sending out to all the members a letter giving a price list and about the amount of discount they could expect, we placed over a thousand-dollar order, and saved two hundred dollars for our members.

In just one year's time, the advertising we have received, thru the daily paper in the way of write-ups regarding county meetings and field demonstrations by the State Apriarist, and now the big Fair exhibit have started people in this locality to talking honey, and the result can be nothing but a benefit to all concerned. "A word to the wise is sufficient," to wit, if you have no county organization, now is the best time to start one.

Marshalltown, Iowa.

N. A. Talbot.



A honey exhibit that helped bee keeping in Marshall County, Ia.

HEADS OF GRAIN FROM DIFFERENT FIELDS

Why Not a Good Idea?

I approve a bottom-board whose floor-board slants downward from the back to the front. The foundation walls are $\frac{1}{8}$ inch deeper than the Root verticals. The floor boards are $\frac{3}{4}$ inch instead of $\frac{7}{8}$. The grooves are cut in the side walls at such an angle that the clearance at the back of the board is $\frac{3}{8}$ inch, and at the front $1\frac{1}{4}$. This drop of $\frac{7}{8}$ is sufficient to carry away all moisture. In packing bees for winter in quadruples cases it is desirable to have the hives fit snugly back

to back. It is also desirable to have the floor boards slant sufficiently to drain away the condensation within the hives. Both of these desirable conditions can not be met with the floor boards now on the market. Hives on their summer stands must be tilted forward to drain away moisture during heavy rains. Hives which are out of vertical, either way, present an appearance which is not so pleasing to the eye as when set with their lines horizontal and perpendicular. So, this bottom-board.

Columbus, O.

F. B. Moore.

Locations.—By Bill Mellvir

(With Apologies to Walt Mason.)



I travel east, I travel west, to find locations that are best; but everywhere I try my luck it seems the flowers all have struck. I travel north, I travel south, but beemen talk of floods and drouth; of weather bum and flowers in bloom with nothing in them but perfume. In irrigation's early days I got the Colorado craze; but insects came to eat the bloom, which busted up my Pike's Peak boom. I took my bees to Idaho where acres of alfalfa grow, but others thought I had a snap and crowded me clear off the map. I moved to Yakima from there and found beekeepers in despair, for beemen by the score had heard that this location is a bird. A beeyard every half a mile has come to be the western style; so each beekeeper has a gun to keep infringers on the run. I then tried California sage where big crops once were all the rage; but seasons dry came thick and fast, which

put me on the blink at last. Imperial Valley tempted me below the level of the sea, but there the sun's fierce burning rays soon cured me of the desert craze. I settled in the Lone Star State to gather sweets from horsemint great, but natives talked of seasons bum and said, "the worst is yet to come." In Florida the tupelo looked like the stuff to make the dough; but, say, I am a prudent skate and I know when to pull my freight. I came back home where clovers grow, where winters reek with ice and snow, where rains or drouth in summer time make this the punkiest kind of clime. I search in vain for climates grand where beastly weather has been canned; where flowers are spilling grub for bees, and silver bones grow on the trees. I travel up, I travel down, but come right back to my old town, for each location on the map has some unpleasant thing on tap.

THE members of the executive committee and friends of the American Honey Producers' League will hold a conference at the Great Northern Hotel, Chicago, on Dec. 6 and 7. A very full attendance of the friends and those interested in the welfare of the League is hoped for.

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The 40th annual convention of the Ontario Beekeepers' Association will be held at the Ontario Agricultural College at Guelph on Dec. 1, 2, and 3, 1920. At this convention the new apicultural building will be formally opened, which is the finest apicultural building in North America. The secretary, F. Eric Millen, whose address is Ontario Agricultural College, Guelph, Ont., is arranging a remarkably fine program on which will appear the names of some of the most prominent beekeepers of the United States and Canada. The members of the Association will be able to secure accommodations at reasonable rates, and a list of rooms will be on file for the members' convenience. A banquet will be one of the features of the convention. Programs will be mailed to members in November.

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The annual meeting of New York State beekeepers will be held in Syracuse on Dec. 1, 2, and 3. Details and information can be secured of the Secretary, John H. Cunningham, 303 University Place, Syracuse, N. Y.

* * *

The Chicago North-Western Beekeepers' Association will hold its annual convention on Monday and Tuesday, Dec. 6 and 7, at the Great Northern Hotel, Chicago. An excellent program is promised, a copy of which will be mailed upon application to the secretary, J. C. Bull, 1013 Calumet Ave., Valparaiso, Ind.

* * *

The annual fall meeting of the Western New York Honey Producers' Association will be held in Buffalo, N. Y., at the Genesee Hotel, on Nov. 9 and 10. All interested in beekeeping or honey are cordially invited to attend. J. Roy Lincoln, Pembroke, N. Y., is secretary, and will furnish information.

* * *

The amounts of the cash premiums offered at the various state fairs this fall give some indication of the beekeeping industry in the several States. Wisconsin led with a total amount of premiums of \$1153; Minnesota was second with a total of \$1110. The premiums offered at other state fairs were as follows: Connecticut, \$489; Colorado, \$314; Arizona, \$196; Illinois, \$589; Iowa, \$497; Kansas, \$363; West Michigan State Fair, \$595; Nebraska, \$447; New York, \$394; Ok-

lahoma Free State Fair, \$437; Tennessee, \$301; Texas, \$423; Southeastern Fair at Atlanta, Ga., \$300; Washington, \$250; North Carolina, \$153; North Da-

kota, \$165; Missouri, \$151; Indiana, \$169; South Dakota, \$144; Oregon, \$129; and others with smaller premiums. Ohio and Michigan made exhibits on the co-operative plan under direction of the state associations of beekeepers, the honey on exhibit being supplied by beekeepers in these States and sold at the fair, the net returns for such sales going to the beekeepers who furnished the honey for the exhibit.

* * *

Bees Versus Smelters Again.

Our older readers will remember that a case came up between the beekeepers on one side and the big smelter companies on the other side, in the Salt Lake Valley, Utah. Bees were killed by the poisonous gases by the tens of thousands. Apparently the smelter companies, rather than bring the case to trial, settled with the beekeepers in the sum of \$50,000, which sum was probably divided pro rata according to the number of colonies that the beekeepers originally held. A case like it was tried in Ontario, Canada. In this case the beekeepers made a claim for \$30,000 damages. The case came to trial; and while the judge himself believed that the smelter caused the death of the bees he rendered a verdict for the defendant, the smelter companies, because, he said, the beekeepers had not clearly proved their case. This was in the fall of 1916.

Still another case of a similar character is about to be tried in Arizona. Beekeepers in and near Verde have suffered heavy damages. Both sides are prepared for a great legal struggle. As the matter now stands, it means the ruination of the beekeeping industry covering a considerable area, or the payment of heavy damages on the part of the smelter companies, with the probable requirement of putting in expensive apparatus to control the gases so they may not destroy every living thing in the way of vegetation and bees within range of the great stacks. Any beekeepers living near big smelters anywhere in the United States, and who have suffered damage, are requested to communicate with W. E. Woodruff, Verde, Ariz. This case will doubtless establish a precedent whichever way it goes, and the beekeepers are interested that the case shall not go against them. The trial will probably come off the latter part of November or the first of December, and so Mr. Woodruff should be communicated with at once. Tell him what you know and he will send you blanks for your deposition.



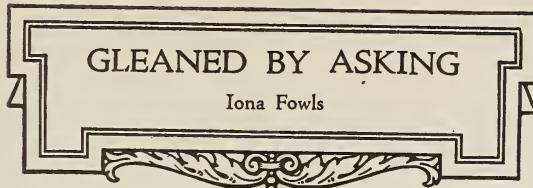
QUESTIONS.—(1) What is the value of drawn comb expressed in terms of extracted honey? (2) In an article in July Gleanings, Wesley Foster thought the queen-excluder induced swarming, and so he gives his queens the run of every story. Please criticise this as applied to the amateur beekeeper. (3) Would you prefer some modification of this, as, for example, one and one-half or two stories for the queen; or lifting brood and keeping the queen down? (4) A sideline beekeeper with 15 colonies keeps down swarming by lifting three or four frames of brood in May (when the colony has about five frames of brood), leaving one frame of brood and the queen below the excluder, and cutting out the queen-cells if started, the upper story becoming a super after the brood is hatched. He says he has not had a swarm in three years. I plan to try this next season. Have you any suggestions?

Ohio. Frank E. Burgess.

Answers.—(1) We are quite unable to express the value of drawn comb in terms of extracted honey. As you probably know, the amount of honey required to produce a pound of wax has never been definitely ascertained. It has been estimated at from five to fifteen pounds. (2) When one has as many colonies to manage as has Wesley Foster it is necessary to use short-cut methods that would not be advisable in the case of a small beekeeper. It is impossible for one to allow the queen to raise brood in any part of the hive she chooses, and yet get as fine a grade of honey as he would get by the use of excluders. One who has but a few colonies of bees will naturally take pride in producing the very best grade of honey possible. To do this he will need queen-excluders in case he produces extracted honey. In case he produces comb honey, excluders are not as necessary, because the supers contain foundation instead of comb. The queen will have no inducement to go above when foundation is used. (3) The use of two stories or one and one-half stories for the queen, or raising brood and keeping the queen below are found to be quite satisfactory in many locations. We feel certain that in your locality you will not find that it pays to let the queen have access to two stories thruout the season. Whenever we have tried this it has resulted in a smaller crop of honey for those colonies. The queen should be put down into the lower story at or just after the beginning of the flow. (4) The plan you suggest, you will probably like, provided the colony is strong enough so that there is no danger of the frames of brood in the lower story chilling.

FEEDING SYRUP.

Questions.—(1) In September issue, page 555, under "How to Feed Syrup," it occurs to me a much better plan is this: Remove outer cover leaving inner cover on. Now remove the small



block from the inner cover which covers opening for bee-escape, placing inverted bucket containing syrup over hole thus made in the inner cover. (2) I enclose a small box lid, containing two holes punched

each way. Which is right? Should the rough edge of the hole be on the inner or outer side of lid?

North Carolina.

O. C. Wall.

Answers.—(1) In regard to feeding syrup we have used your plan of inverting a pail of syrup over the hole in the inner cover, and find that if one is careful it will work all right. The only reason we did not mention it in this department is because we have seen the plan in operation when syrup was pouring down the outside of the hive, having overflowed the inner cover. At the time we saw this the robber bees were hard at work and making quite a commotion. For a careful person, however, the plan is all right and we ourselves would not hesitate to feed in this way. (2) We always have the rough edges inside the lid. If the bees do not take the syrup rapidly enough, however, and a slight crust of syrup granulates over the hole, the bees could probably remove it more readily if the rough side were next the bees.

HONEY—PRICE, SWEETNESS, AND USE IN RECIPES.

Questions.—(1) Is it possible to use honey instead of sugar in making preserves, jellies, puddings, cakes, cookies, pies, candy, ice cream, root beer, etc.? (2) Have the different kinds of honeys the same degree of sweetness? (3) Also, why should light honey cost more than dark-colored honey?

Massachusetts.

H. T. McMannus.

Answers.—Yes, honey may be used instead of sugar in many recipes, but it is often necessary to vary the recipe when using honey. For instance, when substituting honey for molasses, less soda will be needed. Also, some recipes are improved by using a pinch of baking powder if honey is used. Then too, the fact that honey is a liquid makes it necessary to use a smaller amount of other liquids in recipes where honey is substituted for sugar. For each cupful of honey one-fifth cupful less of milk or other liquid should be used, as a cupful of honey contains about one-fifth cupful of water. (2) It is quite impossible for one to describe different kinds of honey in regard to their sweetness. Certain flavors appeal to some individuals as being sweeter than others, where a chemical analysis would show no difference in this respect. Usually highly flavored honeys are mistakenly believed to be sweeter than those of more mild flavor. (3) Light honey usually has a more delicate flavor and is more pleasing in appearance. For this reason it is in greater demand and brings a higher price on the market. It is a little more difficult to produce a light

honey, for care must be taken not to allow the bees to mix with it a poorer grade from some other source.

DANGER OF DRIFTING.

Question.—If I set 10 hives one against the other in a bee shed and pack fronts and backs with four inches of shavings, what will be the effect when they come for a flight? Will drifting be too injurious?

Pennsylvania.

W. H. Hattwick.

Answer.—There is always a chance that bees may drift when the colonies are placed closely beside each other; but, if they are left in this position thruout the year, of course, there would be less danger of drifting. As you probably know, when colonies are moved a short distance many of the old bees are apt to return to the old location and be lost; so, if you place them in the shed as you are planning, it would be necessary to wait until they have stopped flying in the fall, and then move them at some time when it seems likely that they will not be able to fly for several weeks. If you do not wish to wait as long as this, it would be possible to move the bees to some place a few miles away and leave them for a few weeks until they have forgotten their old location, and then move them into the shed.

WINTERING IN THE BARN.

Question.—I have 20 colonies of bees, and would like to know if I could winter them in the upstairs of my barn. It is 20 x 24 feet, formerly a hayloft, with board floor. It has two windows in the gables.

New York.

A. W. Cerfert.

Answer.—It would be possible to winter the colonies in the barn if each colony is provided with a separate outside entrance; but, of course, you would still want some packing for the hive, and the hives should not face towards the prevailing winds.

WHY MOTHS ENTERED SUPERS.

Question.—I think in a late Gleanings you have been discussing gas for killing moths in combs. Moths were very bad here last year and the year before. I put out some combs three days for the bees to clean, and a few days later they were full of worms. I put them over an empty super and burned sulphur under them. That fixed the smallest and the greatest for all time.

Iowa.

H. L. Kerber.

Answer.—Yes, we have also used sulphur with success. Your mistake in getting the combs cleaned was in leaving them outdoors so long. If they were put out in the morning the bees would have them cleaned by night, at which time they should be taken in and piled carefully in piles so that no moths can get in. You see if such combs are left out in the evening they are just about certain to be infested with moths, for the moths fly in the evening and readily detecting the odor of the honey enter the supers and there lay their eggs in the combs. Such combs should never be left out except during the day.

NEW FOUL BROOD TREATMENT.

Question.—On page 533, September Gleanings, Mr. Jones says, in giving his new American foul

brood treatment, "Leave the top and sides open and the bees will go across." Now, what meaning is intended to be conveyed in those words? Does it mean top and sides of the old or new hive, or does it mean both? Or, does it mean both of the hives must be knocked to pieces, the sides left out as well as the top, or tops, and that only the ends and bottoms of the hives are left to hold the frames? This "top and sides open" expression is puzzling. How does he "slide the cover forward" a little if the top is left open?

California.

A. Norton.

Answer.—We quite agree with you that the statement is not very clear. Mr. Jones evidently meant that the space between the two hives is not to be screened in, but that the bees would simply walk across from one hive to the other without very many of them taking wing. The hives themselves are to be left covered, except that the old hive has the cover slipped forward about an inch.

STRONG COLONIES. QUEEN SEEN LAYING IN QUEEN-CELL. STRANGE LOSS OF QUEENS.

Questions.—(1) What is considered the most important thing one must work for in honey production? What should be the aim of a beekeeper who runs a few colonies as a side line and expects to make increase as he advances in his work? (2) In answer to question on page 486 of Gleanings you say you have never seen a queen deposit an egg in a queen-cell, and you do not know of anyone who has. I have seen a queen deposit eggs in queen-cells. It happened during the June flow that one of my colonies was getting lazy, so I decided to look in the hive. I found the workers busily constructing queen-cells. I found the queen walking on the comb. Then she came to a queen-cell in the end of the comb. She took a look in and turned to go. There was such a mass of workers around her she could not get out. She tried to push her way out, but each time the workers seemed to be urging her back. Then she took another look into the queen-cell and backed in and deposited an egg. Then the workers backed out of her way. She came to another cell, and the same act took place. After she left this cell I noticed that there were two eggs deposited in it. I closed the hive until the next noon. Then I found an egg in every queen-cell. They had a good many cells constructed. From this I believe when eggs are found in queen-cells that they are placed there by the queen. I, however, think that the workers have a strong influence on the queen, that has a good deal to do with her behavior. (3) When making increase I found that many queens that had emerged from ripe cells given in cell-protectors to colonies at the time they were made queenless, had later disappeared after being mated and laying a week or more. These queens were reared during the June flow in a strong colony and under favorable conditions. I cannot understand this. Have you any information on this matter?

Illinois.

Ernest W. Peterson.

Answers.—(1) It is rather difficult to name any one thing more important than all other factors, and, yet, keeping the colony always strong is perhaps as important as any. For one who is expecting to make continual increase our best advice would be to become as well posted as possible on bee behavior under different conditions. He should, if possible, visit neighboring beekeepers and work side by side with them in the apiary, and also should read

the best literature on beekeeping. (2) We were indeed glad to have your report of actually seeing a queen depositing eggs in the queen-cells. You are the second person who has made such a report since the question first appeared in Gleanings. (3) This is quite unusual and we are at a loss to explain why those young queens died after they had become mated and began laying. However, if several weeks had elapsed, it is possible that the queens were lost when they left the hive to be mated, and that the eggs you saw in the combs were not laid by this queen but rather by laying workers that developed after the bees realized the loss of their queen. Of course, if those eggs developed into workers, this theory would have to be discarded.

WORKER SEALED IN QUEEN-CELL.

Question.—Noting a queen-cell that was slightly indented and old I cut it open with my penknife, and inside there was a fully developed queen, of normal size for a good queen, but dead; and alongside of her there was a little worker, about half-sized, with wings, legs, etc., fully developed except in size, also dead. One of our best inspectors, Alex Keir, a man well posted on bees, was with me and I called his attention to it and afterwards threw the bee away. Since then I regretted doing so, as it opens up several questions to me. Was it ever noted before? And what about the royal jelly which we are taught is the only medium by which a worker egg is changed to a queen larva? Both queen and worker were apparently fed on the same food, but one remained a worker while the other was a queen. I'm on the doubtful bench about the royal jelly's being the only agent in producing a queen and leave it to the experts to explain. You may think I am a bit wobbly in this statement about the two bees in the same cell, but I will assure you I am not. Besides, I have the evidence of both Mr. Keir and Mr. O'Brien, the owner of the bees, that the facts are as I have stated.

British Columbia.

W. H. Lewis.

Answer.—Are you quite certain that the bee was reared in the cell with the queen? It seems quite likely that a bee entered the cell and was accidentally sealed in by the bees. We have often seen bees accidentally shut in cells in this way and wonder if this may not possibly be the explanation. Such a bee would naturally appear undersized.

SAFE TEMPERATURE WHEN HANDLING BROOD. SIZE OF ENTRANCE.

Question.—(1) I am often in a quandary about exposing brood when examination requires a temperature of below 80 degrees, which Gleanings once stated to be the required temperature. Could you not give me some further details of value? (2) I am undecided about the size of entrance to give in early fall or when the entrance should first be contracted with the coming of cool weather. What would you advise?

Virginia.

J. T. Satterwhite.

Answer. — (1) The person who advised that combs of brood should not be handled when the temperature is below 80 degrees was, no doubt, trying to give very safe advice for beginners. However, many good beekeepers would not hesitate to open a hive when the temperature was 60 degrees F.; but, of course, they would not leave the brood exposed. They would simply re-

move one frame, examine it, then replace it before taking another frame from the hive. In this way the brood would always be covered with bees and would, therefore, be much warmer than the outside temperature. But we would not advise the beginner to take chances on handling brood when the temperature is as low as this. If there is no wind stirring it would probably be safe to handle the combs of brood when the temperature is 65 degrees F., if no comb is left outside of the hive for more than 10 seconds. (2) When it gets a little cool the entrance should be contracted to an opening $\frac{3}{8}$ by 5 or 6 inches until time for packing for winter. Then a still smaller entrance may be given, $\frac{3}{8}$ by 2 or 3 inches, or smaller. The main idea is to contract the entrance in the early fall to a size such as will keep the brood warm without making the bees so uncomfortable that they are obliged to cluster outside.

GRANULATED HONEY AND POLLEN FOR WINTER.

Questions.—(1) Will uncapped honey sugar in the hive over winter? If bees are wintered indoors, won't they use such honey even if it is sugared? (2) What can I do with combs that are full of pollen so they look more like a piece of board than a honeycomb? Would it be wise to take them out in the fall and put in combs of honey?

Minnesota.

F. A. Olson.

Answers.—(1) Usually uncapped honey is used by the bees before it has time to granulate. There is, however, a great difference in the rapidity with which various honeys granulate. Granulated honey should never be given the bees for winter stores, but should be reserved until spring. The bees will then be able to obtain plenty of water which is necessary in order to convert the granulated honey to a liquid form. (2) In many localities such combs are valuable for use in the spring if there is a scarcity of fresh pollen. Combs that are completely filled with pollen ought to be removed from the hives and replaced with frames of honey for winter. When such combs are found earlier while it is still quite warm, the pollen may easily be removed by taking the curved end of the tool and digging into the mass of pollen until you reach the midrib. Then simply peel off the comb and pollen. After a little experience you will find that you can easily peel the side of the comb like this in a very short time. If the comb is then put in the hive when there is still a honey flow on, the bees will rapidly build out comb to take the place of the cells removed. After they have built it out in this way the comb may be turned and the opposite side treated in this same manner. One contributor to Gleanings recently reported soaking such combs for a day or so in water. He said that he could then shake out quite a little of the pollen, and that when placed in the hives the bees would remove the remainder.

LIZARDS EAT BEES.

Question.—Kindly let me know if red or green lizards are enemies of bees. I went out one

morning early just at break of day to the hives and noticed a bee on the front of one hive, and just above it was a green lizard intently watching the bee. I killed the lizard, fearing it would get away. I have killed about a dozen this spring on the hives.

North Carolina.

J. E. Turner.

Answer.—Lizards do eat bees, and sometimes are quite troublesome about the apiary. If you had opened this lizard, you would likely have found the bodies of dead bees within.

DIVIDING INTO NUCLEI FOR WINTER.

Question.—What advice could you give me on the following plan of manipulations of the "Long Idea Hive"?

During the late flow of honey in the fall an ordinary swarm of bees is placed in the "Long Idea Hive," which is divided by means of close-fitting frames covered on each side by wire screen or sheet queen-excluder, making a double excluder or screen on each frame. Two such screens are provided, dividing the hive into three parts. In each part is placed a queen which has just started to lay, thus making three colonies in one, each having honey sufficient to last until the clover bloom the following spring. At the approach of spring the three queens begin laying (and due to the heat of so many bees in a one-story double-walled hive this would begin early), and by spring or fruit bloom these bees would be in condition to gather some surplus (the season being normal). Shortly after fruit bloom or before the clover flow the queens are removed and placed in common hives as nuclei, which would be self-supporting and thus form the increase. By eliminating these two queens we have disposed of the care of so many larvae and given more bees a chance to gather honey. Huge supers can be provided; or, better, the hive body may be made so that the ten-frame supers exactly fit on top. The queen thus left to keep up the supply of bees would be unable to do so; and, as a consequence, the brood-frames would be filled and left for the next season, while the bees that placed the honey there would die, and the beekeeper would fall heir to lots of honey. I almost forgot to say the cost of these surplus bees would be the two queens. I am only a beginner, but it looks better than bees at \$2.50 per pound in packages.

Ohio.

Chas. O. Wilkes.

Answer.—If the colony was large to begin with, you could perhaps winter them successfully in this way, but our experience in wintering small nuclei in this way has not always been successful, so that it is quite possible you may find fewer divisions in the spring than you left in the fall. Even if we intended wintering the colony as three nuclei, we would prefer thin wooden division-boards rather than screened division-boards. The use of the thin wood still gives the advantage of warmth from the adjacent nucleus, and at the same time prevents a circulation of air thru the division-board. Yet our experience has been that a colony winters better all together than it does divided into nuclei. If you try the experiment, we shall be interested in knowing your results. It may be that you will decide it better to wait until spring before dividing your colony, in which case, of course, you will need to feed in order to build them to sufficient strength.

Your plan of uniting the colonies into extra-large ones is similar to that practiced by Harry Warren of Nevada, who finds the plan quite satisfactory for his locality. The extra cost of this method, however, would be more than that of two queens, for considerable honey is always consumed in rearing and maintaining a large force of bees.

MATERIAL FOR BEE-SUITS.

Question.—I want to get material in white to make myself some sting-proof bee-suits. I don't know what to buy. My own bees are not bad to sting, as I keep them pure Italians; but I have taken up the work of caring for other people's bees, requeening, etc., and most of them are blacks or hybrids and often very vicious. If you will kindly advise me I shall be most grateful.

Answer.—You have certainly given me a hard task this time, to name a cloth that the bees can't sting thru. You see they can sting thru leather shoes. One proved it to me this summer. But such behavior, of course, is not usual. Ordinarily khaki proves sufficiently thick for a bee-suit, and is much more serviceable for this purpose than white cloth would be. Of course, there is a pleasure in working in a white bee-suit—all spick and span; but, if one really buckles right down to work, it will be found that in a deplorably short time the spick-and-spanness disappears. If I had but two or three colonies I might wear a white bee-suit, but for real work with the bees I prefer a khaki bee-suit.

STORES FOR WINTER. HIVES MADE OF CYPRESS.

Questions.—(1) In using sugar to feed how should the syrup be made? How much will be required to winter one hive? (2) Can I winter my bees on full combs of honey or should there be some empty cells in the combs? (3) Will soured honey or combs two years old hurt the bees if I see nothing wrong except sour honey in the cells? (4) Will bees work in hives made from cypress or any other kind of wood?

Illinois.

Otis W. Jones.

Answers.—(1) When feeding for winter the syrup should be made of two parts of sugar to one of water. Every colony should be left with 30 to 40 pounds of stores. (2) The bees will naturally cluster toward the center of the hive where there are a few empty cells. The frames at both sides of the brood-nest may be completely filled with honey. In fact, some beekeepers would not hesitate to leave their colonies with all the frames filled with honey. We, however, would prefer a few empty cells toward the center of the hive for a brood-nest. (3) Old combs are even better than new since they are warmer. Sour honey would be very poor for winter stores, and would doubtless cause dysentery and death of the colony before spring. But the soured honey may be given to the bees during the summer time with no danger as the bees will use up the honey or change it before winter. (4) Bees work quite readily in cypress hives or hives made of any other wood of which we have ever heard.

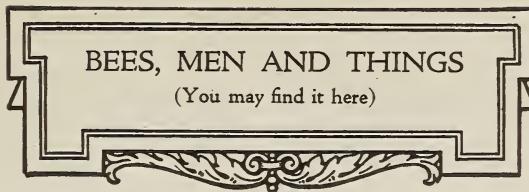
A. I. ROOT, Dr. Miller, Doolittle, Alexander, Townsend, and all the other regular and occasional editors of departments or writers were to me as much friends as if our intercourse were actual and material. When Mr. Hutchinson died, I suffered, and when I had a copy that told that Doolittle also had passed I received another shock. The last number I saw without 'Stray Straws' gave me a shock, and I hurried thru for fear A. I. Root would be also missing. To me most of these men having been living epistles, preaching a vital Christianity shown in honest work."—Mrs. I. Pursell, Norfolk County, Mass.

"As you travel along the Southern Pacific R. R. going west, you pass a range of mountains with two heads, called 'Das Cabezas.' Well, there are eight of us scattered around the foot of this mountain, handling bees, and we all get some fine honey from the catclaw and mesquite. We have all got the best place, and our little workers have brought in a big harvest all year. As we have not had our usual summer rains, many of the desert plants are blossoming early. Among them is the mescal, a plant known to flower lovers as 'century plant,' and it produces a drunk as well as honey. Our bees are gathering it now and you can not get near them they are so sassy. As one of the boys says: 'They sure have a mescal drunk on just like the Mexicans, for you can't get near them.' But every super is full as soon as we can get at them."—H. G. Huntzinger, Cochise County, Ariz.

"European foul brood is all over the country, with quite a sprinkling of American. The State College is doing all that it can, with the money available and the few inspectors they have to control the diseases. We should have \$10,000 for the two-year period, and a competent man in each of the westside counties, and until we do get it, this disease is going to gain steadily."—W. L. Cox, Inspector of Apiaries for Grays Harbor, Mason and Thurston counties, Wash.

"I turned loose about 50 or 60 good virgin queens this summer in the middle of the day. Ten or fifteen days later I found several of them making themselves at home in queenless colonies and in colonies where there were old queens with clipped wings. I call that self-introducing. I will try this out every time I have extra queens."—Charles S. Kinzie, Riverside County, Calif.

"In the winter of 1918-1919 I obtained data from Nov. 2 to April 2 on the loss of weight per day of a group of seven colonies which I wintered in double-walled hives in a sheltered location. The average decrease



in weight in the five months was 15 pounds nearly. It is not quite correct to state that figure represents stores consumed, as undoubtedly more stores had been consumed and converted into brood, but there had also been some loss in the weight of the bees themselves. However, if bees can be wintered out of doors in this climate with so little weight lost during the winter, why should one bother with a bee cellar?"—L. L. Wheeler, Whiteside County, Ills.

"In the fall of 1919 I united two colonies of bees that, so far as I know, were not related. This spring when I examined them I found two queens working together peaceably. I have examined this colony several times since and each time found both queens. The last time I examined them was on July 28. They have one of the best colonies in my yard. They are in a regular ten-frame Langstroth hive. These two queens were clipped, and I know without any doubt that they formerly belonged to two different colonies."—A. N. Norton, San Juan County, N. M.

"Last winter our bees were in ten-frame hives, two-story high, 10 frames below, 8 above. Those in the upper story had solid slabs of sealed sweet clover honey, with Hill device on top; then covered with a piece of canvas; then forest leaves and shavings over these; about 8 inches of shavings around the sides, 3 inches sawdust under the floor. They came thru alive with every queen, and when I opened the hives on March 27 I found young bees crawling around on the frames."—A. W. Lindsay, Wayne County, Mich.

"Along the Apalachicola Valley, where tupelo honey is produced in its purity, we have harvested barely one-third of an average yield, which was also the case last year, as we harvested less honey these two years than any years before in the last 15 years. Yet the honey buyers are holding out on us and do not hesitate to mention in their correspondence that we are asking too much for honey, taking into consideration the fact that we have so large a yield. Where they get their information I am unable to say, but we do contend that we are not asking too much when we have not asked above 24¢, and are now offering our crop, most of which we still have on hand, at 20 to 21 cents f. o. b. here."—Tupelo Honey Exchange, H. E. Rish, Mgr., Calhoun County, Fla.

"In behalf of the members of our society of Rhone and France I take it upon myself to send to you on the occasion of the anniversary of your national independence their cordial salutation. We do not

forget that in the darkest hours of the late war the valiant American soldiers fought heroically by the side of ours against our invaders. The simple and noble word of your general as he set foot on French soil, "Lafayette, we are here," went to the heart of every Frenchman. The beekeepers of Rhone and Durance wish happiness and prosperity to all their brothers in Ohio."—R. Bouvier, President of the Beekeepers' Society of Rhone and Durance, Barbentane, France.

"Recently I found a queen-cell containing a queen and worker. The worker was just about the size of one just emerging from the cell and was very closely tucked in alongside the abdomen of the queen. Heads of both pointed downward in the same direction, which would hardly be possible if it had entered the cell and been accidentally closed in, for I have never seen a worker bee enter a cell backwards. The worker was evidently raised in the queen-cell with the queen."—W. H. Lewis, Edmonds, B. C.

"During the early spring I moved several colonies of bees to the mountains, setting them on large flat rocks. About June 1 I noticed large red ants in great numbers making nests directly under the hives. I tried several remedies without results. I then placed two pieces of soft wood, 3 inches by 4 inches, 18 inches long, under each hive. These I coated with a heavy roofing composition, manufactured by The High Grade Mfg. Co. of Cleveland, O., namely Gilso roof paint. As it is very slow drying, and has a strong odor, it not only removed the ants from the hives but also from the rocks."—A. F. Rexroth, Dauphin County, Pa.

"Instead of mosquito bar on the extracting-tents I now use galvanized window screen. At first we thought it would kink and break, but we find to our surprise it is almost indestructible and will last for years on the tents. Where the bee ranges burn off, as they do here in California, and you have to find new locations almost every year, it doesn't pay to build permanent extracting-houses at all the apiaries at present lumber prices. The cost of building 26 extracting-houses would be considerable. We can set up the complete outfit and be ready to extract by the time the steam will heat the knife. System is the best key to success."—A. E. Lusher, Los Angeles County, Calif.

"I have a fine colony of bees that stayed on a limb in the open for three years. I put these bees into a hive some two or three weeks ago. For several days they did not want to stay inside of the hive. They had but little protection from the hot sun in summer, and no protection in winter except a few twigs. There was no propolis or anything over the nest. Just the natural comb. The outside comb was full of sealed honey. I got three gallons of nice honey out of this

nest. The combs in the center of the nest were about two feet long, and the nest at the top was about 18 inches in diameter. Wintering bees in the open air, without any kind of protection, speaks very well for our winters in west-central Texas."—M. C. White, Kimble County, Texas.

"The late summer and early fall have been the best for making increase that we have had in many years. Taking it all in all, I am more than satisfied with what the bees have done. In July I had some colonies that had four deep supers above an excluder. Some beekeeper friends of mine on seeing them wanted to know why I stacked them up so. I told them just for ornamental purposes. But if they could have looked into those hives they would have seen more honey than they had ever seen in all theirs put together. Some people may get along with one deep or several shallow supers, but if they do so during a big flow they will lose a large part of it or have some unsalable honey."—W. T. Rabb, Travis County, Texas.

"In conversation with A. J. Sanford of Redmond, Ore., he stated that the thermometer went to 32 degrees below zero last winter, and his annual white sweet clover wintered. He secured a few seeds from A. I. Root, sowed them in drills, and took good care of them. So far he has gathered some pounds of seed and expects the sum total to be about three pounds from the few seeds sent him. It is evident to us that this new variety is hardy enough to stand almost anything. Redmond is in Eastern Oregon and subject to extremes in both hot and cold weather."—E. J. Ladd, Portland, Ore.

"I was much interested in the account by E. C. Davis, July Gleanings, page 420, of his experience with greasy waste as smoker fuel. I have had the same trouble while using a dark-colored felt hat with the Muth veil. I changed the felt for a straw hat and had no more trouble, altho I still used greasy waste."—Everett E. Vreeland, Bristol County, Mass.

"I am a young beekeeper, only 13 years old. I have 7 colonies of bees. The strongest one made 5 supers of comb honey. The rest made from 2 to 3 each of surplus. I am in school now writing when I get a few spare moments. Besides bees I sell 75 papers each evening, and am studying electricity besides my 'Lone Scout' work. Honey is selling for 40¢ per pound for fancy and 35 for other. As teacher is calling class, I will close."—Forest McHose, Boone County, Iowa.

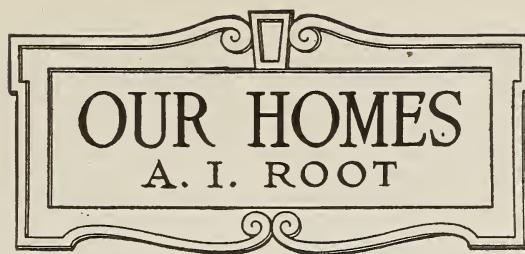
"We are having a nice fall flow of honey at present, Oct. 7, mostly cotton, and from present indications it will last four or five weeks yet. It gets warm down here during summer, sometimes going to 120 degrees for a few days, and it seems a bad time for queens, tho we have them all under shade here in the valley."—C. K. Forrest, Imperial County, Calif.

ON page 492 of the August issue of Gleanings I tried to explain to you why I should say with such confidence and assurance, "I know that my Redeemer liveth." Well, since then I have come across a verse from a beautiful hymn that expresses better what I wish to say in four lines than I was able to do in almost a whole page. The hymn is now reproduced on records for the phonograph. Below is the verse I have referred to:

From sinking sand he lifted me,
With tender hand he lifted me;
From shades of night to plains of light,
Oh praise His name! He lifted me.

If there was ever anybody in sinking sand I was the one; and he in very truth, lifted me. Still more, "with tender hand" he lifted me. "From shades of night" long expressed my condition. Only those who have been there can imagine or realize the horror of the "night" of unbelief and infidelity; and in the same way only a poor soul who has been thru the change, from shades of night "to plains of light" can realize what that means. And the expression in that last line, "Oh praise his name!" comes in so beautifully that I feel like shouting when I think it over. And then the last three words, "He lifted me," are the culminating climax of this wonderful hymn.

A few Sundays ago in our men's Bible class a young friend of mine suggested that not only was the Bible inspired but that some of our precious hymns were the work of the inspiration of the Holy Spirit; and I think that this little hymn that I have quoted from was most surely the result of the inspiration of the Holy Spirit. During the years of my early manhood I had but little or no thought of anything but self. Self was first and foremost. I did not go to church, I had no interest in Sunday-schools, and the Y. M. C. A. did not appeal to me. A young minister from Oberlin came to our town. I went to hear him more out of curiosity than anything else. I wondered if that boy, as I called him, could really preach. His first work, so it seems, was to make personal calls on the people of the town. I am afraid I was



And I, if I be lifted up from the earth, will draw all men unto me.—John 12:32.

He brought me up also out of a horrible pit, out of the miry clay, and set my feet upon a rock, and established my goings.—Psalms 40:2.

Come unto me, all ye that labor and are heavy laden, and I will give you rest.—Matt. 11:28.

with me plainer than any one else had ever done. The outcome was a complete change in my life. It has been called "the new birth." I not only pleaded in public for the dear Savior I had found, but I established Sunday-schools in the surrounding schoolhouses—so many of them, in fact, that there were hardly hours enough on Sunday for me to go from one place to another. As fast as I could I installed superintendents in these mission schools. One of our best and most successful superintendents was taken from the *Medina jail*. He had served one term in the penitentiary for stealing chickens; and as soon as he was out he went at it again; and when I first met him he was on his way to serve his second term in the penitentiary. He was one of that reckless, defiant class, and declared that they might take his dead body back to the penitentiary, but they would never take him alive. Profane, squirting tobacco juice, defying God and man, I found him in the stone jail. He went to his reward many years ago; but he went rejoicing, and trusting in the "tender hand" that lifted him from the "sinking sand" of sin and crime.

Toward the close of one sabbath, just as winter was coming on, after I had finished my trip, mostly on foot, to my various schools, I was told that in the neighboring town a young married man (with a wife and two children) was preparing to open a new saloon on the following Monday morning. In fact, he had his liquors all purchased, and placed on the shelves ready for business. This friend of mine said the saloon would surely open the next morning unless something could be done to stop it; and he said he did not know of anybody else than myself who could do what would have to be done, and done at once.

rude to him when he tried to do his duty toward me as well as toward everybody else; but thru God's providence he was instrumental in "lifting me." He is now gone, and gone to his reward; but well do I remember "the tender hand" with which he took me to task while he talked

Tired as I was, I started off, praying for faith and guidance of the Holy Spirit. The man was stubborn and obdurate. To my great surprise his wife sided in with him. All I could say or do was unavailing. I asked to kneel in prayer before leaving. After some hesitation permission was granted. My prayer was something like this:

"O Lord, thou seest how utterly I have failed in my work. Give me faith while I pray that thy Spirit may take this father and mother in hand, and do what I have utterly failed to do."

Then I prayed for the two children who were present. I think the outcome must have been a surprise to the father as well as to myself. The young mother rose up, and, altho her eyes were drenched with tears, there was a new light in them that broke forth. She arose to her full height, and, pointing her finger at her husband, said, "Sir, you know how I have objected to this thing from first to last; but I am ashamed to say that I reluctantly consented. I have changed my mind, and hereby give you notice that if you open that saloon tomorrow morning, as you are planning, you and I are no longer husband and wife."

At this he turned on me and said:

"Aren't you a pretty specimen of Christian to come here and break up a family and make trouble between a man and his wife?" *

I am afraid, to tell the truth, that the result was that I laughed outright. I did not fear any separation, and there was none. Under the circumstances I did not worry, even if I had succeeded in making trouble in the little household. There was present with me an old friend of mine who had been all his life a skeptic and an infidel, and one who ridiculed Christianity. As we went out of the door he took back what he had said, in words something like this:

"Mr. Root, if this is Christianity, I will take back all I have ever said against it. I believe in that kind of religion—a sort of religion that *does something*."

Well, when I started back home it was still snowing, pitchy dark, and I had no lantern. I had to make my way along the railway, and it was a good deal of the time difficult to get my feet on the ties, but I was so happy that I felt like shouting

*I hardly need tell you that the saloon was never opened. I think he sent the liquors all back to where he got them. Neither did any divorce follow; and I am sure the good father, when he came to think it over calmly, decided more emphatically than he ever did before, in regard to the good wife, in the language of Holy Writ, "Her price is far above rubies."

praises almost every step of the four miles.

The stanza from the hymn "He Lifted Me" was clipped from a weekly periodical entitled God's Revivalist and Bible Advocate, Cincinnati, Ohio. From the same periodical, dated Aug. 19, I clip as below from an article entitled The New Birth:

We have a nature as we come into the world that is thoroughly alive to sin. In all languages men know how to quarrel, how to be fussy and abusive; how to lie, how to curse and be profane. Sin is common to the race, and sinful speech to all languages. Thus men are alive to evil, to wicked deeds, and to corrupt conduct.

The statement in the above, that all nations and all languages know how to curse and swear, was a new idea to me; and it recalls to my mind that when I passed the winter in Cuba a good missionary explained to me the "swear words" used in the Spanish language. Somehow I had got it into my head that the heathen on the face of the earth who do not know our language do not swear nor curse at all. Very likely the above statement is true. If, then, humanity, no matter where or what language they speak, know how (perhaps we might say from instinct) to curse and swear, they must have *some* conception of God the Father of us all. If, then, they know how to rebel against the rule of the great Father, it follows, so at least it seems to me, that they have some conception also of love and loyalty to this same God. Or, to put it short, every heathen, unless he is an idiot or an imbecile, has a conception of right and wrong. I wish every reader of Gleanings might read that whole article on the new birth. It is by L. L. Pickett. I quote again, toward the close of the article, a consideration of a child of humanity after the new birth.

He passes from death unto life. Old things pass away. All things become new. He now loves what he once hated, and hates what he once loved. Old habits are abandoned, old ways forsaken. His plans are new; his companions, his purposes, his desires are new. Sin becomes exceedingly sinful to him. Its ways are offensive, repulsive. He is *born again*.

The expression in the above, "He now loves what he once hated," pictures my poor self exactly. All at once I turned square about—"old habits abandoned, old ways forsaken." In some of our old hymn-books there is a beautiful hymn beginning:

Jesus, I my cross have taken.

Let me digress again.

Our youngest son, Huber, urged that Mrs. Root and I should go with him down to Cleveland and visit a moving-picture show. It took a strong hold of him because it told of a mother's love and a

mother's prayers. I was, of course, pleased with it, but somehow I felt a longing all the way thru to see some credit given to "the Lamb of God that taketh away the sin of the world." Briefly, the play was given of a small boy who was eager to get hold of a violin. He not only made wonderful progress on the violin, but his salary when he was grown up went as high as \$1,000 for playing for a single evening. In this way the mother's prayers were answered. Now, if this violin-playing had been the means of bringing sinners to repent I could most heartily have enjoyed it all the way thru. But there was no such mention from beginning to end, and it made me think of that last verse in the old hymn I have mentioned. I have been told that this hymn was composed by a young girl who was driven from her home because she had come out publicly and acknowledged the Lord Jesus Christ as her Savior. I suppose you all have a copy of this hymn, so I will quote just the concluding stanza:

Oh! 'tis not in grief to harm me,
While thy love is left to me;
Oh! 'twere not in joy to charm me
Were that joy unmixed with thee.

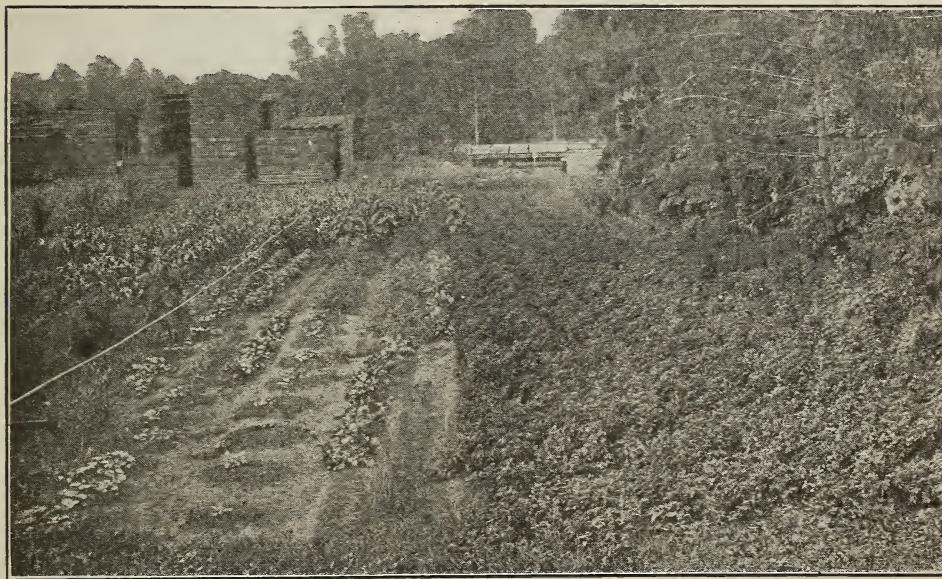
I am not sure that I can as yet fully subscribe to the first and second lines; but year after year as I grow older I have no joy or charm in anything unless that joy is mixed, in some way, and connected with the dear Savior who lifted *me* out of the miry clay and placed my feet on the solid rock.

Does some poor soul ask, in concluding my talk, what he must do to receive that new birth? Well, the three concluding verses in the 11th chapter of Matthew give full directions for the guidance of every sinful soul. Here they are:

Come unto me, all ye that labor and are heavy laden, and I will give you rest. Take my yoke upon you, and learn of me; for I am meek and lowly in heart, and ye shall find rest unto your souls. For my yoke is easy, and my burden is light.

OUR SUMMER GARDEN IN OUR OHIO HOME.

My good friends, the principal reason for giving you the accompanying picture is to show you the luxuriant growth of seven rows of that Canadian potato—see page 494, Gleanings for August. The raised hills on the left of the picture are my melons. For several seasons we have had so much trouble from excessive rains, that many of the melons rotted before they were ripe. In our Florida garden, as I have told you, we have raised beds about 12 feet wide with paths about one foot deep between them to carry off the water when we have such tremendous rains. Well, I have tried this here in Ohio; but even then my melons seemed to suffer from too much wet. So I planted the seed on little mounds four or five feet across; and just now, Sept. 2, there is quite a good promise of cantaloupes, even if our watermelons should not ripen. The picture was taken about the first of August. The white line



Our Ohio garden showing the Canadian potatoes that gave a yield a year ago of over 1000 bushels to the acre.

along the left is a sprinkling-pipe I have mentioned heretofore. I have used it only once during the present season; and as a big shower came up almost immediately afterward, I think my sprinkling did more harm than good. You can get a faint glimpse of the new sweet clover right in the foreground between the potatoes before mentioned and a row of beets. The seed was sown in the greenhouse about the middle of April, and many of them are now six feet high or more. Down at the lower end of the garden you will notice the sweet corn that was planted at four different times. As a result we are having plenty of beautiful nice corn, not only for our own use, but to give away to our less fortunate neighbors.

At the lower end of the garden you get a glimpse of a part of our lumber piles; and at the left of these piles there is a flat car from which the lumber has just been removed. At the further corner, right hand, is a glimpse of some evergreen trees that I planted for a windbreak about 40 years ago. But they are getting to be so large that we are planning to remove them.

Later.—Today is Oct. 7, and I will have to explain that the picture of our garden did not "get in" until after the notice on page 581 of our October issue was printed, telling about the rotten potatoes. I had planned to give our subscribers some eyes of this wonderful potato by mail—a potato that gave over 1000 bushels to the acre; but as they rotted when the Early Ohio and the Burpee Extra Early did not rot at all I gave up that project; but I am glad to say that, after getting the potatoes thoroly dried out, the rotting ceased entirely, and they are keeping now as well as any other potato. However, I shall have to conclude that this particular potato is more disposed to rot than other varieties.

"HIGH COST OF HIGH LIVING."

On page 46 of January Gleanings I told you about my big discovery of a most healthful food, and also a most delicious food, at a fraction of the cost of a greater part of the food we are buying every day at our groceries and otherwise. That talk was about parched wheat or parched corn, etc., ground in a little coffee mill or some other kind of little home mill. After this parched corn was ground, Mrs. Root made it into a sort of mush. After a while she became tired of making "so much mush," and for a change we have been buying more or less puffed wheat, corn, oats, toasted

cornflakes, shredded-wheat biscuit, etc. I mention these because they have become great staples apparently. Every little while a sample package of the puffed wheat or cornflakes is dropped on our front porch. Now, these health foods—foods that are ready to serve on a minute's notice—are a splendid thing; in fact, I have thanked the Lord, and now thank him again, that these convenient foods can be purchased at every corner grocery as well as in all the large cities. When you are off on an automobile trip and want it on a minute's notice, just step into a restaurant and tell them that you want cornflakes or shredded-wheat biscuit and a bowl of milk, and you will get it in a twinkling. I usually want my milk hot, but that takes a little more time. Well, in counting everything—milk and these cereals—they constitute a comparatively cheap way of living. I think I usually get a pretty good lunch, even in the cities, for about 15 cents—10 for the milk and 5 for two shredded-wheat biscuits. But here is another side to this matter:

On every package of wheat cereals I have mentioned you will find a statement in fine print telling just how many ounces you get for your 15 cents. I believe a law was passed requiring the manufacturers of these foods to state exactly how much they give for the money. I do not know whether you have read this fine print or not; but here is the point:

The puffed wheat, puffed corn, etc., cost the most of any of them; and I am not sure but it is the most delicious and most wholesome; but you pay 15 cents for only 4 ounces, or $\frac{1}{4}$ pound; and their advertisement declares it is just the pure grain and nothing else, just as nature furnished it, except that it is well cooked.

Well, 15 cents for 4 ounces of wheat would be 60 cents for a whole pound, and yet every daily paper quotes wheat at about 4 cents a pound. If you put your wheat into a dripping pan and set it in the oven until it is nicely browned, and then grind it in a mill, compared with puffed wheat the latter costs not only 10 times as much but 15 times as much. The manufacturers of cornflakes give us 8 ounces instead of only 4. But corn is usually only a little more than half the price of wheat; but we can safely say that it costs you ten times as much to buy cornflakes as it does to parch your corn and grind it as I have suggested. When it comes to shredded-wheat biscuit we have 12 ounces instead of 4 or 8; but even then there is a tremendous margin between the parched wheat and the shredded-wheat biscuit. Of course it costs

quite a little to make the pasteboard boxes and do the printing, etc., besides the cost of distribution all over the land at one fixed price. I believe the biscuit people advertise that there has as yet been no advance in their prices; but the prices were fixed in the first place with enough margin so they could keep one steady price notwithstanding the fluctuations in the wheat market.

When my Home department in GLEANINGS was started, something like 50 years ago, one of the first things I did was to experiment in regard to the cost of living. I contrasted the big difference between the stuff grown in your own garden and buying the same in cans or glass receptacles at your grocery; and I decided even then, that it was a great waste of money to buy any form of food in tin cans if you can possibly avoid it; and when it comes to glass the matter is even worse. Glass is heavy for transportation, and usually costs more than tin. If you can purchase these foods, either in tin or some other kind of container, so the package may be used over and over again, of course it is an advantage. In many places you can get canned fruits in Mason fruit jars that may be used over and over again. Perhaps some of you may come back at me and say, "Mr. Root, how about the Airline honey that is so extensively advertised and sold now in almost every corner grocery?" Well, I am glad I can honestly say in this case, as I have just said in regard to the other foods, "Keep some bees yourself—at least enough for your own family consumption. If you can not do this, take your automobile (almost everybody has an automobile nowadays) and go and visit some beekeeper and buy enough to last six months or a year, thus saving the grocer's profit and the cost of tin and glass receptacles." Carry out the same idea in regard to everything you have on your table.

If you have plenty of means, and wish to avoid the cost of expensive help in your kitchen, then perhaps it is well to keep right on getting your stuff at the groceries just as you have been doing. But bear in mind that I have no ill will toward the grocers. They are good friends of ours. Neither have I any ill will toward the manufacturers of food products. I am glad they can afford to dump a little sample of parched goods on our porches to let us know how good their things are and what they have accomplished in the way of furnishing our daily bread on a moment's notice, and at a cost of only a few pennies or

a few nickels. If you, my dear friend, have been wondering how you might reduce the "high cost of living" in your own home, just make it your study to follow the suggestions I have given you in the above.

Later.—After the above was in type I found the following clipping in the Cleveland Plain Dealer:

The farmer was called a profiteer when he got \$2.20 a bushel for his wheat. But what about selling this same wheat as puffed or popped wheat at \$36 for sixty pounds? He was called a profiteer when he got \$2 a bushel for corn, but what about corn flakes bringing \$15 for fifty-six pounds? He was called a profiteer when he got 35 cents for cotton of which about 4 cents' worth made 75 cents' worth of gingham, and his 65-cent wool mounts to \$25 when in a manufactured form.

It seems to intimate that somebody besides myself had been thinking along the line of the above. Well, now, as we have both been criticising the puffed wheat—that is, criticising the *price*, nobody objects, of course, to the quality of the breakfast food—I want to say something in its favor. The nicest "apple pie" I ever ate, or tasted, was not really apple pie at all. It was apple pie made of yellow transparent apples, and puffed wheat, crisped in the oven, for pie crust. It was not only more appetizing but more wholesome, I am sure, than any *common* apple pie. The sauce was flavored with cinnamon, my favorite condiment; and so far as the expense was concerned it was a little cheaper than any apple pie that we get at the restaurants. By the way, I notice that a Cleveland restaurant has been overhauled for charging 15 cents for a sixth part of an apple pie. He paid the baker 30 cents for the pie and then received 90 cents for cutting said pie into six pieces. I do not know but nice, clean wheat parched in the oven would do almost as well as the puffed wheat, but it would be somewhat more trouble.

"NOT AS YET 'SINSIBLE' OF THE FACT."

Once upon a time a big turtle that had been beheaded was out in front of a restaurant. A crowd was gathered around to see how long it would live without a head. An Irishman in the crowd settled the question by remarking, "Oh! he's dead all right, without any question; but as yet the craythur does not seem to be quite sinsible of the fact." Well, the decapitated turtle reminds me of John Barleycorn. He is dead all right (praise the Lord), and dead for evermore, but some of his advocates are like the beheaded turtle—not as yet "sinsible" of the fact.

THE NEW ANNUAL SWEET CLOVER UP TO DATE.

As I dictate, Oct. 22, we have been having a long severe drouth. In fact, we have had scarcely any rain since first of the month. As a consequence, the pastures are dried up, and pretty much everything except the annual sweet clover. Well, this new clover is a pleasant surprise. We have something like 200 plants in our garden, of different ages. Those planted out in May do not seem to mind the drouth a particle. They are covered with bees from morning till night, and putting out new blossoms continually. If we had acres instead of one or two hundred plants it would furnish the biggest amount of feed (and, mind you, the *very best* of feed) of any plant I ever knew or heard of. And now here is another point:

Our good friend Fields, of the Henry Fields Seed Co., sent me a picture that I hold in my hand. A single plant of the new sweet clover stands away up above his head, and that is not all. It is spread out from right to left and all around like a great bushy apple tree, so that I judge from the picture of this single plant that it has spread out so as to be seven or eight feet across. The reason of this enormous growth is probably because it has had the right soil (with plenty of lime) that just suited it, and extra cultivation and plenty of room. From this I judge the plants might be located as far apart as hills of corn. With such soil and such cultivation as Mr. Fields gives it, it would cover the ground. The picture will be given in our next issue.

Below are some suggestions from friend Fields in regard to the new clover, especially the matter of scarifying the seed. The reports indicate, without question, that the seed comes up not only more quickly, but every seed is more sure to grow where it is well scarified.

SCARIFYING THE SEED.

Friend Root:

We are threshing our annual sweet clover today, and hope to have 4,000 lbs. Half of it has been sold to a man in Ohio.

We are getting an excellent yield of seed and it is of very fine quality. We are cleaning it up in beautiful shape and then scarifying it on top of that. The scarifying entails quite a little bit of shrinkage and loss, but I believe it ought to be done anyway.

What you have yourself, however, you can scarify by a little hand work, if you care to take the trouble. All you need to do is to cover a block of wood with sandpaper and then pour the seed out on a cement floor, or other smooth, hard surface, and roll it around and rub it with this block of wood. You will soon have a good job of scarifying, without a great deal of work. Of course it is a little bother, but worth the while.

I would suggest that you publish something to this effect in Gleanings, for there will be lots of people with small amounts of sweet clover seed who will wonder how they can hull it and scarify it.

If the seed is dry you can hull and scarify it surprisingly easy this way, but of course only in small amounts.

HENRY FIELD SEED CO.,

By Henry Field, Pres.
Shenandoah, Iowa, Oct. 18, 1920.

We shall continue right along to furnish little packets of the seed free of charge, but we have *no seed to sell*. If you wish to *purchase* seed, go to Fields. Their advertisement is in this issue.

REPORTS ON THE ANNUAL SWEET CLOVER.

Friend Root:

The seed was planted on May 20, 1920. On Sept. 5, 1920, the plant stood 9 feet above ground line, 108 inches of growth (from time seed was planted) in 108 days. The plant was dug up Oct. 7, 1920; it was then 9 feet 1 inch above ground, and the root system was 2 feet below ground, making total length of plant 11 feet 1 inch, or 133 inches. The diameter of plant at ground line was 1 1/4 inches, and it weighed 4 3/4 pounds. The amount of seed was 3 oz (*estimated*). This plant was grown from a free sample of seed from Prof. Hughes, Ames, Iowa.

O. T. ROWLAND.

Elsmere, N. Y., Oct. 11, 1920.

"OFF TO FLORIDA."

Once more I am planning to start for my Florida home after election day; and once more, dear friends, remember I am ready to give a prompt answer to any question you may ask if you will inclose in your letter an addressed postal card. As I have no stenographer down in my Florida home I can not write very much; but I think I can promise as much as I can get comfortably on a postal card. Now, mind you, I do not care any thing about the expense of postal cards nor of postage stamps; but I do want you to address the postal card or envelope yourself. You can probably write your name and residence so that the postal clerk will be able to read it; and if you do this for me I can write my answer without even looking to see who you are or where you are. Several friends in winters past have sent me postal cards without *any* address.

"NOTES OR TRAVEL."

Today is Oct. 22, and Ernest and I are planning an overland trip by automobile from Medina, O., to Bradenton, Fla.; and I am proposing to resume, at least for a time, my "Notes of Travel" of years ago. Our route will be furnished by the great manufacturers of rubber tires, of Akron, O. As we are being continually questioned about the possibilities, state of the roads, expense compared with travel by rail, etc., no doubt great numbers who are contemplating an automobile trip from different parts of the North in order to spend the winter in Florida, will be interested in these notes.

THE LEAGUE OF NATIONS.

The prospect that some measure is *possible*, before the great wide world, to stop humanity from cutting each other to pieces as a means of settling difficulties or misunderstandings, is, in my opinion, the greatest and most important movement since humanity was born. Prof. Irving Fisher, of Yale University, says: "It is, in short, reducing fighting of man against man, and substituting the fighting of man against disease and hunger." The *good Book* tells us of the glad time when men shall "beat their swords into plowshares, and their spears into pruning-hooks." May God hasten the day.

Classified Advertisements

Notices will be inserted in these classified columns for 30c per line. Advertisements intended for this department cannot be less than two lines, and you must say you want your advertisement in the classified column or we will not be responsible for errors. Copy should be received by 15th of preceding month to insure insertion.

REGULAR ADVERTISEMENTS DISCONTINUED IN GOOD STANDING.

(Temporary advertisers and advertisers of small lots, when discontinued, are not here listed. It is only regular advertisers of regular lines who are here listed when their advertisements are discontinued while they are in good standing.)

P. C. Chadwick, J. W. Harrison, Seward Van Auken, D. L. Woodward, Strohmeier & Arpe, P. W. Sowinski, R. C. Ortleib, E. E. Mott, J. P. Moore, J. A. Jones & Son, Elmer Hutchinson, H. B. Gable, Hardin S. Foster, M. V. Facey, H. J. Dahl, A. E. Crandall, Robert Conn, M. Bates, Leonard Morton Co., P. J. Dohl Bee Supply Co., Deroy Taylor Co., W. D. Achord.

HONEY AND WAX FOR SALE

FOR SALE—Light honey, two 60-lb. cans to a case. I. J. Stringham, Glen Cove, N. Y.

FOR SALE—Clover, basswood and buckwheat honey in 60-lb. cans. Bert Smith, Roinulus, N. Y.

FOR SALE—White clover and basswood blend honey in new 60-lb. cans, two in case. Sample 20c. Geo. M. Sowarby, Cato, N. Y.

FOR SALE—Very choice white-clover extracted honey in 60-lb. cans. Noah Bordner, Holgate, Ohio.

FOR SALE—Extracted clover honey in car lots. Send for sample if interested. J. D. Beals, Oto, Iowa.

FOR SALE—A1 quality white sweet clover honey, 60-lb. cans, 22c f. o. b. Joe C. Weaver, Cochrane, Ala.

FOR SALE—Clover-basswood honey in new 60-lb. cans and 5-lb. pails. W. B. Crane, McComb, Ohio.

FOR SALE—Extra quality white clover honey in new 60-lb. cans. Write for prices. Edw. A. Winkler, Joliet, R. D. 1, Ills.

FOR SALE—Buckwheat goldenrod blend honey, in 60-lb. cans, two cans per case, 22c lb. Sample, 15c. Fred Telshow, Waymart, Pa.

FOR SALE—Well ripened raspberry-clover blend honey in 60-lb. cans, two cans per case, 25c a lb. Sample, 15c. Fred Telshow, Waymart, Pa.

FOR SALE—Extra quality clover honey in cans and barrels. Write for special prices. F. W. Lesser, East Syracuse, R. D. No. 3, N. Y.

FOR SALE—Buckwheat honey in new 60-lb. cans, two to the case and 160-lb. kegs. B. B. Coggshall, Groton, N. Y.

FOR SALE—Clover honey with slight basswood blend, new 60-lb. cans; also buckwheat, 60-lb. cans. H. F. Williams, Romulus, N. Y.

FOR SALE—Choice buckwheat honey in 60-lb. cans, two to case, at 20c per lb. f. o. b. here. Vollmer & Demuth, Akron, N. Y.

FOR SALE—15,000 lbs. fancy, choice, extra well-ripened, white clover extracted honey in new 60-lb. cans, at 20c. Edw. A. Winkler, Joliet, R. D. 1, Ills.

FOR SALE—Michigan white honey, in car lots or less. Michigan Honey Producers, East Lansing, Mich.

FOR SALE—10,000 lbs. A1 quality white sweet clover honey, in new 60-lb. cans. Will sell in quantities to suit. Sample free. W. D. Achord, Fitzpatrick, Ala.

FOR SALE—Extracted clover honey in 60-lb. cans, \$27.50 per case of two cans. Selected No. 1 comb honey packed eight cases in a carrier, \$7.50 per case. Prices f. o. b. here. J. D. Beals, Oto, Iowa.

FOR SALE—New crop extracted clover honey two 60-lb. cans to case, \$30.00 per case; in 5-lb. pails, \$1.50 per pail; packed 12 pails to case or 30 to 50 pails per barrel. H. G. Quirin, Bellevue, O.

FOR SALE—Clover, basswood or buckwheat honey, comb and extracted, by the case, ton, or carload. Let me supply your wants with this fine N. Y. State honey. C. B. Howard, Geneva, N. Y.

LOCUST DELL HONEY—This celebrated honey is now ready for delivery; clover, \$15.50 per 60-lb. can; \$30.00 for two in a case; buckwheat, \$12.50 and \$24.00 respectively.

Alfred W. Fleming, Hudson, N. Y.

EXTRACTED HONEY—New white sage, 60-lb. cans, 24c a lb.; white Arizona, 60-lb. cans, 20c lb.; white N. Z. clover, 56-lb. net cans, 23c a lb.; L. A. Haitien, 400-lb. barrels, 18c a lb.; buckwheat honey, 160-lb. kegs, 20c a lb. Cans two to a case f. o. b. New York. Sample sent for 20c.

Hoffman & Hauck, Inc., Woodhaven, N. Y.

FOR SALE—150 cases white clover, 17c lb.; 400 cases L. A. alfalfa, 15c; 150 cases buckwheat, 12c; 300 cases L. A. sage, 15c; 75 cases orange, 18c; white Haitien, 12c; amber Haitien, 11c in 400-lb. barrels; 50,000 lbs. Chilian in kegs, 10c lb. Beeswax, any quantity, 30c a lb. All f. o. b. New York. Walter C. Morris, 105 Hudson St., New York.

FOR SALE—Clover extracted honey of unsurpassed quality; new cans and cases, prompt shipment. You will be pleased with "Townsend's quality" extracted honey. Not a single pound extracted until long after the flow was over; thus the quality. Would advise intending purchasers to order early, as we have only a half crop. Address with remittance

E. D. Townsend & Sons, Northstar, Mich.

HONEY AND WAX WANTED

Quote me your best price on clover honey in 60-lb. cans. E. C. Pike, St. Charles, Ills.

WANTED—Extracted and comb honey. Carload or less quantities. Send particulars by mail and samples of extracted.

Hoffman & Hauck, Inc., Woodhaven, N. Y.

BEESWAX WANTED—For manufacture into SUPERIOR FOUNDATION. (Weed Process.) Superior Honey Co., Ogden, Utah.

WANTED—Bulk comb, section, and extracted honey. Write us what you have and your price. J. E. Harris, Morristown, Tenn.

BEESWAX WANTED—We are paying higher prices than usual for beeswax. Drop us a line and get our prices, either delivered at our station or your station as you choose. State how much you have and quality. Dadant & Sons, Hamilton, Illinois.

WANTED—Beeswax. We are paying 1 and 2c extra for choice yellow beeswax, and in exchange for supplies we can offer a still better price. Be sure your shipment bears your name and address, so we can identify it immediately upon arrival, and make prompt remittance.

The A. I. Root Co. Medina, Ohio.

We buy honey and beeswax. Give us your best price delivered New York. On comb honey state quantity, quality, size, weight per section, and sections to case. Extracted honey, quantity, quality, how packed and send samples.

Chas. Israel Bros. Co., 486-490 Canal St., New York City.

FOR SALE

HONEY LABELS—New designs. Catalog free. Eastern Label Co., Clintonville, Conn.

FOR SALE—A full line of Root's goods at Root's prices. A. L. Healy, Mayaguez, Porto Rico.

ROOT'S goods at Root prices. A. W. Yates, 3 Chapman St., Hartford, Conn.

FOR SALE—One-pound jars in two-dozen cases, ten cases or more at \$1.75 per case, f. o. b. factory. A. G. Woodman Co., Grand Rapids, Mich.

FOR SALE—SUPERIOR FOUNDATION, "Best by Test." Let us prove it. Order now. Superior Honey Co., Ogden, Utah.

How many queens have you lost introducing? Try "The Safe Way" push-in-comb introducing cage, 50c. Postpaid. O. S. Rexford, Winsted, Conn.

ROOT'S BEE SUPPLIES—For the Central Southwest Beekeeper. Beeswax wanted. Free catalog. Stiles Bee Supply Co., Stillwater, Okla.

PORTER BEE ESCAPES save honey, time and money. Great labor-savers. For sale by all dealers in bee supplies.

R. & E. C. Porter, Lewistown, Ills.

FOR SALE—Good second-hand empty 60-lb. honey cans, two cans to the case, at 60c per case f. o. b. Cincinnati. Terms, cash with order. C. H. W. Weber & Co., 2146 Central Ave., Cincinnati, O.

FOR SALE—To reduce stock, crates of 96 one-gallon cans, with bails and three-inch screw caps, at \$17.50 per crate f. o. b. Grand Rapids.

A. G. Woodman Co., Grand Rapids, Mich.

FIVE-GALLON SECOND-HAND CANS.—Buy supply now for next season as price advancing. In good condition, two to a case, 50c per case or 100-case lots at 40c per case f. o. b. New York.

Hoffman & Hauck, Inc., Woodhaven, N. Y.

FLORIDA BEEKEEPERS—You can save money by placing your order for Root's Bee Supplies with us. We carry the complete line. Will buy your beeswax. Write for catalog.

Crenshaw Bros. Seed Co., Tampa, Fla.

FOR SALE—25 acres, second bottom, four-room brick house, barn, hog and hen house, one acre fruit trees. Hog-tight fence around entire place. All under cultivation. Fine place for bees and fruit.

C. S. Bennett, 308 7th St., Charleston, Ill.

FOR SALE—Good second-hand double-deck comb-honey shipping cases for 4 1/4 x 4 1/4 x 1 1/2 sections, 25c per case, f. o. b. Cincinnati. Terms, cash with order. C. H. W. Weber & Co., 2146 Central Ave., Cincinnati, Ohio.

CANADIAN BEE SUPPLY & HONEY CO., Ltd.—73 Jarvis St., Toronto, Ont. (Note new address.) We have made-in-Canada goods; also can supply Root's goods on order. Extractors and engines; GLEANINGS and all kinds of bee literature. Get the best. Catalog free.

FOR SALE—Root's Extractors and Smokers, Dadant's Foundation, and a full line of Lewis' Bee supply. Our new price list will interest you. We pay 38c in cash, and 40c in trade for clean yellow beeswax delivered in Denver. The Colorado Honey Producers' Association, 1424 Market St., Denver, Colo.

FOR SALE—Two-frame, non-reversible Novice extractor, only used one season, \$15.00 f. o. b. at Grass Lake, Mich. Mrs. Thomas Durbin.

FOR SALE—Genuine White Annual Sweet Clover. Garden-grown on our grounds and guaranteed pure. New crop seed, 1 lb., \$5.00; 1/4 lb., \$1.50; 1 oz., 50c, all postpaid.

Henry Field Seed Co., Shenandoah, Iowa.

FOR SALE—27 Root 4 x 5 x 1 1/2 10-frame comb supers, new, painted, \$1.40 each; 95 ditto, used once, \$1.25 each; 12 ditto, unpainted, \$1.15 each. \$165 takes lot.

C. C. Brinton, 32 Luzerne Ave., Pittston, Pa.

FOR SALE—5000 fences for 4 x 5 x 1 1/2 sections to be used with slats, \$4.00 per 100; 50 ten-frame Danzenbaker comb honey supers, nailed and painted, good as new, \$2.00 each; 500 Alexander feeders, 30c each, f. o. b. Montgomery.

J. M. Cutts, Montgomery, Ala.

FOR SALE—500 pounds of Dadant's light brood foundation for Hoffman frames, put up in boxes holding 50 pounds net. This foundation is in the best of shape, the same as I received it. I will not accept orders for less than one box. Price, 75c per pound.

M. E. Eggers, Eau Claire, Wisc.

FOR SALE—About 100 Jumbo hives with metal and inner cover and bottom, \$2.75 each; 60 shallow extracting supers, 6 1/4 in. deep, 75c each; 20 standard bodies, \$1.00 each; some 4 1/4 x 4 1/4 and 4 x 5 comb honey supers, 65c each; a few queen-excluders, everything 10-frame. Good as factory-made hives. Everything nailed and painted and in A1 shape. Jumbo hives not delivered until next spring.

A. H. Hattendorf, Ocheyedan, Iowa.

FOR SALE—25 Jumbo 10-frame hives, metal tops; 35 10-frame hives, metal tops; 30 empty 10-frame hives, wood tops; 30 empty 8-frame hives, wood tops; 40 bee-escape boards and excluders; 34 lbs. Jumbo foundation; 30 lbs. light brood foundation. Hives painted white, in good condition, with full sheets of foundation. Requeened this year, Italian bees. Reason for selling, am moving to Florida for other business. Will sell at first reasonable offer. C. D. Shinkle, Williamstown, Ky.

BARGAINS in used supplies—40 plain joint standard 10-frame brood-chambers, N. P., 9 1/4 in. deep, 40c; 25 supers filled with 28 plain sections, 4 1/4 x 1 1/2 with full sheets foundation and fences, 80c; a quantity of bait sections at 2c each; 135 comb honey supers for 4 1/4 x 1 1/2 plain sections, 10-frame size, complete, 35c; 10 single board 10-frame size covers, 35c; 8 lbs. extra-thin foundation, 3 1/2 x 15 1/2, 80c; 10 lbs. light brood, 16 1/2 x 7 1/2, 75c; 5 1/2 lbs. medium for Jumbo frames, 75c; 40 wood-zinc excluders, 16 x 20, 30c; No. 17, Cowan rapid reversible extractor used but little, \$20.00. Root wax press, \$9.00.

Ernest Reid, R. D. 2, Clio, Mich.

REAL ESTATE

FOR SALE—One 20-acre farm with 200 colonies of bees and 3/4 acre of ginseng.

L. Francisco, Dancy, Wisc.

Relinquishment! 80 acres on the country road between Hemet and Babtiste. Best location for bees in Southern California. Price \$500. Plenty water and feedhouse and fence. Owner blind.

T. Rinden, Babtiste, Calif.

FOR SALE—Bee, poultry and fruit farm of 20 acres, good six-room dwelling, small stable, good chicken house, good water, level land, 16 acres in cultivation, balance pasture, no bee disease, bearing orchard, one acre strawberries. Mail route and school wagon service, one mile from R. R. town, high school and good markets. Price \$2700, \$1000 cash, balance time. Apply to owner.

D. H. Wells, Ridgely, Md.

WANTS AND EXCHANGE

WANTED—Old combs and cappings for rendering on shares. Our steam equipment secures all the wax. Superior Honey Co., Ogden, Utah.

WANTED—500 to 1000 lbs. pure crude beeswax, for immediate shipment. Write your offers to Apothecaries Hall Co., Waterbury, Conn.

WANTED—100 swarms Italian bees, in 10-frame hives. State lowest cash price and condition in first letter. Grace Reading Company, Redford, Mich.

WANTED—To buy for cash, a Barnes saw outfit, complete for beekeeper's use. State age, condition, and lowest price in first letter.

Grace Reading Company, Redford, Mich.

WANTED—Shipments of old combs and cappings for rendering. We pay the highest cash and trade prices, charging but 5c a pound for wax rendered. The Fred W. Muth Co., Pearl and Walnut Sts., Cincinnati, O.

OLD COMBS WANTED—Our steam wax-presses will get every ounce of beeswax out of old combs, cappings, or slumgum. Send for our terms and our new 1920 catalog. We will buy your share of the wax for cash or will work it into foundation for you. Dadant & Sons, Hamilton, Illinois.

FOR SALE—Southern California ranch of 216 acres of land. 15 acres in bearing peach trees, early and canning varieties; 19 acres under ditch line, good citrus land; 25 acres grain land; balance 157 acres pasture with good spring; 90 colonies of bees in 9 and 10 frame hives, two-story and good Italian stock, average 120 lbs. per colony, spring count, 1920. Plenty of forest reserve land joining, making a good bee range. Small house sheds and honey house. Four miles from town and railroad, one mile from graded school. Price, \$10,000. Terms. Address owner.

Chas. F. Schnack, Escondido, Calif.

BEES AND QUEENS

Finest Italian queens. Send for booklet and price list. Jay Smith, R. D. No. 3, Vincennes, Ind.

Hardy Italian queens, \$1.00 each. W. G. Lauver, Middletown, Pa.

Golden Italian queens, untested, \$1.25 each; dozen, \$12.00. E. A. Simmons, Greenville, Ala.

When it's GOLDEN it's Phelps. Try one and be convinced. Virgins, \$1.00; mated, \$2.00. C. W. Phelps & Son, Binghamton, N. Y.

FOR SALE—Italian queens, three-banded and Goldens, untested, \$1.25 each; 6, \$6.50; 12, \$13.00. Now ready. G. H. Merrill, Pickens, S. C.

Queens of Dr. Miller's strain, untested, \$1.25 each, \$12.50 per dozen; tested, \$1.75 each, \$18.00 per dozen. Safe arrival and satisfaction guaranteed. Geo. A. Hummer & Sons, Prairie Point, Miss.

Golden queens ready April 15th. One queen, \$1.50; 6, \$7.50; 12, \$14.00; 100, \$100.00. Virgins, 75c each. W. W. Talley, Greenville, R. D. No. 4, Ala.

PHELPS' GOLDEN QUEENS will please you. Mated, \$2.00. Try one and you will be convinced. C. W. Phelps & Son, Binghamton, N. Y.

BEES BY THE POUND — Also **QUEENS**. Booking orders now. FREE circulars give details. See larger ad elsewhere. Nueces County Apiaries, Callallen, Texas. E. B. Ault, Prop.

FOR SALE—40 strong colonies of bees in 10-frame hives, part standard, remainder Buckeye hives. No disease. Hives full of honey. Also equipment.

L. L. Wheeler, Sterling, Ills.

FOR SALE—25 colonies of bees, free from disease, stores for winter. In Root 10-frame hives, combs drawn from full sheets, \$12.00 per colony in one lot. J. F. Garretson, Bound Brook, N. J.

PURE ITALIAN QUEENS—Not the cheapest, but the best we can grow; bright yellow, with clean bill of health; sure to please; such as we use in our own yards. Untested, \$1.25; \$14.00 per dozen. J. B. Notestein, Bradenton, Fla.

FOR SALE—1920 prices for "She suits me" queens. Untested Italian queens, from May 15 to June 15, \$1.50 each. After June 15, \$1.30 each; \$12.00 for 10; \$1.10 each when 25 or more are ordered. Allan Latham, Norwichtown, Conn.

PHELPS' GOLDEN ITALIAN QUEENS combine the qualities you want. They are GREAT HONEY-GATHERERS, BEAUTIFUL and GENEROUS. Virgins, \$1.00; mated, \$2.00. C. W. PHELPS & Son, Binghamton, N. Y.

Golden Italian queens that produce golden bees; the highest kind, gentle, and as good honey-gatherers as can be found; May to August, untested, each, \$2.00; 6, \$8.00; dozen, \$15.00; tested, \$4.00; breeders, \$5.00 to \$20.00. J. B. Brockwell, Barnetts, Va.

We are now booking orders for early spring delivery of two and three frame nuclei, with untested or tested queens. Write for prices and terms. We also manufacture cypress hives and frames.

Sarasota Bee Co., Sarasota, Fla.

DAY-OLD QUEENS at practical prices. Superior improved Italian stock. Mailed in safety introducing cages. Safe arrival guaranteed to any part of the U. S. and Canada. Send for circular. Prices, 1, 75c; 10, \$6.00; 100, \$60.00. James McKee, Riverside, Calif.

FOR SALE—Around Denver, Colo., 300 stands of bees in standard hives with Hoffman frames, partly equipped for comb honey, about 500 supers; the other part for extracted honey about 200 bodies; 85 per cent young queens and a lot of extras. Price, \$4500. Everything can be had by Nov. 1. G. J. Westerik, 1921 Larimer St., Denver, Colo.

The A. I. Root strain of leather-colored Italians that are both resistant and honey-gatherers. These queens and bees need no recommendation for they speak for themselves. Orders taken now for next season. Untested, \$1.50; select untested, \$2.00; tested, \$2.50; select tested, \$3.00. Circular free. For larger lots, write.

A. J. Pinard, Morgan Hill, Calif.

ITALIAN QUEENS—The Old Reliable three-handed Italians, the best all-round bee to be had. Queens ready to mail April 1, 1920. Will book orders now. Will guarantee safe arrival in United States and Canada. Prices for April and May: Untested, \$1.50; 6, \$8.00; 12, \$15.00. Tested, \$2.25; 6, \$12.00; 12, \$22.00. Selected tested, \$3.00 each. Descriptive circular and price list free.

John G. Miller, 723 C St., Corpus Christi, Texas.

FOR SALE—Pure Italian queens, Golden or leather-colored, packages and nuclei; 1 untested queen, \$1.50; 6, \$7.50; 12, \$13.50; 50, \$55.00; 100, \$100; virgins, 50c each; packages 24 and under, \$2.25 per pound; 25 and over, \$2.00 per pound; nuclei, 1-frame, \$4.00; 2-frame, \$6.00; 3-frame, \$7.50; queens extra. One-story 10-frame colony with queens, \$12.00. Golden Star Apiaries, R. 3, Box 166, Chico, Calif.

HELP WANTED

WANTED—Another good queen-breeders for season of 1921. W. D. Achord, Fitzpatrick, Ala.

WANTED—Experienced tinner. Good pay, steady work, pleasant surroundings. Address A. I. Root Co., West Side Station, Medina, Ohio, F. M. Sedgwick, Supt.

WANTED—By a large and financially responsible corporation operating in California and Nevada, several experienced bee men and several helpers. Good wages and permanent position 12 months a year. Financial references furnished if desired. Give age, experience and full particulars in first letter. Apply Western Honey Corporation, 703 Market St., San Francisco, Calif.

SITUATIONS WANTED

Position wanted by German-American, aged 42 years, in up-to-date bee business. Has some experience. Understands gardening and fruit-growing. Max Nitschke, 109 W. Division St., Chicago, Ills.

POSITION WANTED—Managing bees on halves in Imperial Valley, Calif., or in Mexico across line from Imperial Valley. Age 40. Wife, no children. 18 years experience.

J. William, Waco, Gen. Del., Texas.

Advertisements Received too Late to Classify

FOR SALE—Annual sweet-clover seed, garden-grown, hand-striped, 1 oz., 50c. Supply limited. Order early. S. Rouse, R. D. No. 2, Ludlow, Ky.

FOR SALE—Finest quality extracted clover honey in 10-case lots. Write for prices. Chalon Fowles & Co., Oberlin, Ohio.

FOR SALE—Buckwheat honey in 60-lb. cans. Good quality and clean. E. L. Lane, Trumansburg, N. Y.

FOR SALE—Italian bees, supplies, new and used hives and supers, 8 and 10 frame. Also excellent farm of 140 acres. Write for information and prices. Ralph Hibbard, Calcium, N. Y.

FOR SALE—Finest Michigan basswood and clover honey, well-ripened and of good flavor, put up in 60-lb. cans and 5 and 10 lb. pails. A. S. Tedman, Weston, Mich.

PACKAGE BEES and PURE ITALIAN QUEENS. Booking orders now for spring delivery. Circular free. J. E. Wing, 155 Schiele Ave., San Jose, Calif.

FOR SALE—15 colonies Italian bees, 14 comb honey and 5 bread supers, 40 brood-combs, 15 cases of extracting-cans; \$175 if taken at once. John A. Baker, 5947 So. Holmar Ave., Chicago, Ills.

FOR SALE—White clover honey, almost water white. Put up in new 60-lb. tin cans, two to the case. Write for prices. D. R. Townsend, Northstar, Mich.

FOR SALE—Finest Michigan raspberry, basswood, and clover honey in 60-lb. cans, 25c per pound. Free sample. W. A. Latshaw Co., Clarion, Mich.

FOR SALE—A fine quality of buckwheat-goldenrod extracted honey put up in 60-lb. cans, two cans to the case, at 20c per lb. Terms cash. Chas. B. Hatton, Andover, R. D. No. 3, Ohio.

FOR SALE—Vigorous leather-colored Italian queens, famous three-banded stock. Bees in two and three-pound packages. Write for information and prices for 1921. Shipments begin about May 1. C. M. Elfer, St. Rose, La.

I am ready now to book your orders for bees in 2 and 3-pound packages for next May and June delivery, also 3-banded Italian queens and nuclei. Write for price list.

C. H. Cobb, Belleville, Ark.

BEE SPRING OF 1921.—Three-banded Italians. All bees shipped on a comb of honey. No disease. Three pounds of bees and an untested queen, \$7.00. Five-pound package and a queen, \$9.00. 10 per cent down will book your order. No bees shipped after June 10. L. C. Mayeux, Hamburg, La.

WANTED—Bulk comb, section, and extracted honey. State quantity and price and send sample of extracted. F. L. Hostetter, Osceola, Mo.

WANTED—2000 lbs. best white clover extracted honey. Sample and price. George Herrick, 645 E. 111th St., Chicago, Ills.

Want bees in Mississippi or Georgia. Name price and full particulars in first letter. Heard & Woodhull, 320 Calvert Ave., Detroit, Mich.

PATENTS Practice in Patent Office and Court
Patent Counsel of The A. I. Root Co.
Chas. J. Williamson, McLachlan Building,
WASHINGTON, D. C.

INDIANOLA APIARY

will furnish 3-banded Italian bees and queens: Unested queens, \$1.00 each; tested, \$1.50 each. One pound bees, no queen, \$2.00. No disease.

J. W. SHERMAN, VALDOSTA, GA.

"Best" Hand Lantern

A powerful portable lamp, giving a 300 candle power pure white light. Just what the farmer, dairyman, stockman, etc. needs. Safe—Reliable—Economical—Absolutely Rain and Storm and Bug proof. Burns either gasoline or kerosene. Light in weight. Agents wanted. Big Profits. Write for Catalog. **THE BEST LIGHT CO.**
306 E. 5th St., Canton, O.

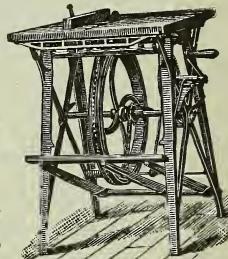
BARNES' Hand and Foot Power Machinery

This cut represents our combined circular saw, which is made for beekeepers' use in the construction of their hives, sections, etc.

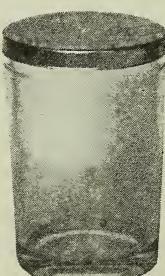
Machines on Trial

Send for illustrated catalog and prices.

W. F. & JOHN BARNES CO
545 Ruby Street
ROCKFORD, ILLINOIS



SPECIAL SALE OF PRIVATE TUMBLERS



6 1/2 Oz. Private Tumbler.

We have a surplus stock of private tumblers, holding 6 1/2 ounces, put up two dozen in a case, including tin tops, at our Philadelphia branch. The cost of these tumblers has more than doubled in the past three years. We offer for a short time the surplus stock, available at 80c per case, \$7.50 for 10 cases, \$70.00 for 100 cases. Prices F. O. B. Philadelphia. Send your order direct to

THE A. I. ROOT CO.,
Medina, Ohio.

Notice to Advertisers

All advertisers (except those wishing to advertise small lots, single articles, or "wanted," in such deals as the purchaser can clearly guard his own interests) are notified that they must furnish financial and character references before their advertising will be admitted to Gleanings columns. Such references should be secured from the local banker, and postmaster, and one public official.

Queen and bee rearers must furnish not only the best of financial and character references, but must sign the Gleanings code for the sale of queens and bees.

This notice is given so that intending advertisers may furnish the necessary references when first applying for space in Gleanings and thus avoid delay in having their advertisements appear.

Gleanings in Bee Culture Medina, Ohio

NEW ENGLAND

BEEKEEPERS will find a complete stock of up-to-date supplies here. Remember we are in the shipping center of New England. If you do not have a 1920 catalog send for one at once.

H. H. Jepson, 182 Friend St., Boston, Mass.

BEES AND HONEY FOR SALE

Italian bees (the kind that fill from 2 to 6 supers), in 8 and 10 frame hives, \$12.00 and \$15.00 per colony. Choice basswood and clover honey, 30c per lb. in any quantity. Queens after May 1st. S. C. Rhode Island Red chickens. Eggs for hatching in season.

MISS LULU GOODWIN, - Mankato, Minnesota.

MASON BEE SUPPLY COMPANY

MECHANIC FALLS, MAINE

From 1897 to 1920 the Northeastern
Branch of The A. I. Root Company

Prompt and BECAUSE—Only Root's Goods are sold.
Efficient It is a business with us—not a side line.
Service Eight mails daily.
If you have not received 1920 catalog send name at once.

Large, Hardy, Prolific Queens

Three-band Italian only. Pure mating and safe arrival guaranteed.

One, \$1.30; 6, \$7.50; 12, \$13.50; 100, \$110.00

Buckeye Bee Co., Lock Box 443 Massillon, Ohio

"Special Crops"

A high-class illustrated monthly journal devoted to the Growing and Marketing of Ginseng, Golden Seal, Seneca Root, Belladonna, and other unusual crops. \$1.00 per year. Sample copy 10c. Address Special Crops, Box G, Skaneateles, New York

ATTENTION Pacific Northwest Beekeepers

We handle a full line of supplies for beekeepers, including Italian Queens. Write us your requirements and for our catalog B. It's free.

Spokane Seed Company, Spokane, Wash.
904 First Avenue



The "BEST" LIGHT

Positively the cheapest and strongest light on earth. Used in every country on the globe. Made and burns its own gas. Casts no shadows. Clean and odorless. Absolutely safe. Over 200 styles. 100 to 2000 Candle Power. Fully Guaranteed. Write for catalog AGENTS WANTED EVERYWHERE. THE BEST LIGHT CO. 306 E. 5th St., Canton, O.



SPECIAL SALE OF HONEY JARS

We have a surplus stock of taper jars, holding 9 ounces, put up two dozen in a case, including lacquered tin tops, at our Philadelphia branch. The cost of these jars has more than doubled in the past three years. We offer for a short time the surplus stock available at 85 cents per case, \$8.00 for 10 cases, \$75.00 for 100 cases. Prices f. o. b. Philadelphia.

Send your order direct to

THE A. I. ROOT COMPANY
Medina, Ohio

9-oz. Taper Jar

World's Best Roofing at Factory Prices

"Reo" Cluster Metal Shingles, V-Crimp, Corrugated, Standing Seam, Painted or Galvanized Roofings, Sidings, Wallboard, Paints, etc., direct to you at Rock-Bottom Factory Prices. Positively greatest offer ever made.

Edwards "Reo" Metal Shingles

cost less, outlast three ordinary roofs. No painting or repairs. Guaranteed rot-free, rust, lightning proof.



LOW PRICED GARAGES

Lowest prices on Ready-Made Fire-Proof Steel Garages. Set up any place. Send postal for Garage Book, showing styles. THE EDWARDS MFG. CO., 1183-1188 Pike St., Cincinnati, O.

FREE
Samples &
Roofing Book

Raise Guinea PIGS. FOR US!

We need men and women, boys and girls everywhere to raise Guinea Pigs for us. We tell you where to get them, show you how and buy all you raise. Big opportunity for money making. Thousands needed weekly.

Easy to Raise—Big Demand No special knowledge, experience or equipment needed. They breed the year round— are very prolific— require but little space or attention. Pay better than power or sunfish— keep house, feed, keep, easier raised— less trouble, market guaranteed. Particulars, contract, and booklet how to raise **FREE** CAVIES DISTRIBUTING COMPANY 3145 Grand Avenue, Kansas City, Mo. Largest Guinea Pig breeders and distributors in America.

Uncle Zeke's Views

I am a beekeeper and am a goin to write for the bee journals from now on.

The first important beekeepin matter to command my undivided attension is the education of beekeepers. It is important. There aint no pains too great to go to to educate 'em. The Wisconsin beekeepers educate theirsefs every August at a beekeepers'

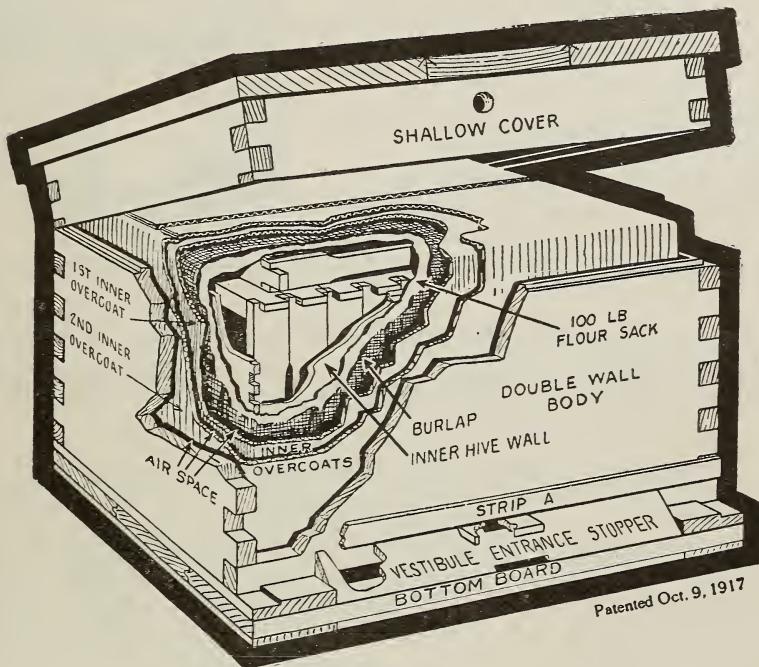


Chataquay held at Madison which is on a lake that has a good and attractive swimmin shore. So I secured the accompanying pitcher of Editor E. R. Root and Dr. E. F. Phillips educatin the Wisconsin beekeepers there. They dont look like apiary suits they have on but they must be.

That is all for this onceet.

Uncle Zeke.

Winter Problem Solved by the Hive with an Inner Overcoat . . .



Furnished with Jumbo Depth or Standard Hoffman Frames.

WINTER PROBLEM. We have described to you in former issues of this Journal how to prepare bees for wintering in the above hive. The two Inner Overcoats, bottomless corrugated paper boxes, with intervening dead air spaces and inner covering or blankets, close up about the brood nest, are what do the trick. A person could have any amount of blankets fastened up on the walls of a room and still freeze to death, if left in the center of the room without close-up protection or insulation. Many bees are packed for Winter under different conditions, without actual close-up protection.

AIR DRAINAGE. In the selection of a location for wintering this should have careful consideration. A dry elevation, one free from fog and moisture as found on lowlands, should be avoided as much as possible. We have found that bees wintered on the top of a building or highland, such as a peach orchard location, winter nice and dry, while those near a swamp in a sheltered location, which would seem much the best, had a considerable amount of moisture.

Order sample shipment of these hives to try out the coming Winter and be convinced of their efficiency and durability. You can easily set the frames with bees out of other hives into these. Catalog and special circulars sent on request.

A. G. Woodman Co., Grand Rapids Mich., U. S. A.

PLEASING THE BEES--AND YOU

WE humans appreciate our homes—the finer the homes the more comforts and conveniences we put into them.

The beehive is both a home and a workshop. We're wondering just how much bees enjoy good homes.

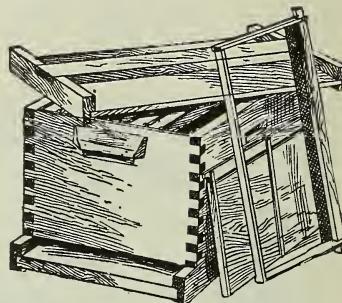
Our business for over 40 years has been to turn out the best beehives and bee supplies. We want both bees and beekeepers to be satisfied with "FALCON" goods. That's what brings home the honey.

"**falcon**" bees and supplies are guaranteed to give satisfaction. Send for red catalog.

W. T. FALCONER MANUFACTURING CO.,

Falconer (near Jamestown), N. Y., U. S. A.

"Where the best bee hives come from."



QUEENS, NUCLEI, BEES BY THE POUND, AND FULL COLONIES

Hives, Supers, Frames, etc., at half price, any thing in the bee line

Prompt Service

Highest Quality

Satisfaction

Fellow Beekeepers: If you are in need of pound packages of bees or bee-supplies, let us figure with you; it takes only a two-cent stamp to get our quotations on your wants. If interested in package bees cheap, we can furnish you hybrid bees with pure Italian queens at a very low price; they will build up as quick as pure Italians, and the price is very much lower. We will have several thousand pounds to offer next season and can guarantee to make shipment on time as early as you want them: for example, if you expect to buy one pound of pure Italian bees with queen for \$4.50, hadn't you rather buy one pound of hybrid bees with a pure Italian queen for \$3.50 and save \$1.00 per pound? In six or seven weeks you would have a pure Italian colony at a much lower price. We will be in position next season to rear over three thousand queens per month that are as good as money can buy; our strain is proved and is of highest quality; we guarantee to please you. Prompt service and fair dealings are our reputation; feel assured that we are behind any thing we sell. If you are in need of any hives, frames, supers, packages, etc., send us a list and let us quote you our prices. Our goods will please; they are guaranteed to fit and come up to standard, or your money refunded. Our supplies are the fruit of our long experience. Let us have your orders in advance.

Prices of Our Three-banded Italian Queens for 1921:

	1	6	12
Untested	\$1.50	\$ 8.00	\$15.00
Select Untested.....	1.75	9.50	17.00
Tested	3.00	14.75	25.00
Select Tested.....	4.00	23.00	42.00

Write for Prices on 100 or more.

Packages Hybrid Bees with Pure Italian Queen:

1-pound package with untested Italian queen.....	\$3.50
2-pound package with untested Italian queen.....	\$5.25

Italians Guaranteed to Equal Any:

1-pound package with untested queen.....	\$4.50
2-pound package with untested queen.....	\$7.00

Nuclei, Pure Italian:

1-Frame with untested queen.....	\$5.00
2-Frame with untested queen.....	\$8.00

Nuclei are on good combs full of brood with plenty of bees.

We guarantee every thing we sell; safe arrival and satisfaction; you take no risk; customer is the judge. All queens guaranteed to be purely mated. We are now booking orders, with one-fourth down for spring delivery. Place your order now.

The Farmer Apiaries - - Ramer, Alabama

Sell Your Crop of Honey to

Hoffman & Hauck, Inc.
Woodhaven, N. Y.

No Lot too large or small, and Purchase
your
Containers, Prompt Shipment

2 1/2-lb. Pails, case 2 doz. \$1.90 each
Crates of 100 \$ 7.25
5-lb. Pails, case 1 doz. \$1.80 each
Crates of 100 \$11.00
10-lb. Pails, case 1/2 doz. \$1.60 each
Crates of 100 \$17.50
5-gal. cans used 2 to case.... 50c case
WHITE FLINT GLASS JARS, SCREW CAPS
Qt. Honey 3-lb. size 1 doz. cartons \$1.25 each
1-lb. " 2 doz. " 1.70 each
1/2-lb. " 3 doz. " 2.00 each

BEE SUPPLIES



We are prepared to give you value for your money. Our factory is well equipped with the best machinery to manufacture the very best bee supplies that money can buy. Only the choicest material suitable for beehives is used. Our workmanship is the very best. Get our prices and save money.

EGGERS BEE SUPPLY
MFG. COMPANY., INC.

Eau Claire, Wis.

**RHODES DOUBLE CUT
PRUNING SHEAR**

Patented

RHODES

RHODES MFG. CO.,
528 S. DIVISION AVE., GRAND RAPIDS, MICH.

THE only
pruner
made that cuts
from both sides of
the limb and does not
bruise the bark. Made in
all styles and sizes. All
shears delivered free
to your door.
Write for
circular and
prices.

Sections! Sections!! Sections!!!

We have in stock an oversupply of the following sizes and are offering them at a big reduction, WHILE THEY LAST. These sections are of a very good grade, and mostly standard sizes. For lack of warehouse room we are sacrificing them at the following low prices:

No. 2—4 1/4 x 4 1/4 x 1 3/4, Two Beeway.....	per M	\$10.00
No. 2—4 1/4 x 4 1/4 x 1 1/2, Plain or No Beeway.....	per M	9.00
No. 2—3 3/8 x 5 x 1 1/2, Plain or No Beeway.....	per M	9.00
No. 2—4 x 5 x 1 7/16, Plain or No Beeway.....	per M	9.00
Mill Run—4 x 5 x 1 7/16, Plain or No Beeway.....	per M	9.70

The above prices are net, cash with order. Sold in lots of not less than 1000.

We are well prepared to fill all orders for Bee Supplies promptly. Send us your inquiries and we will be pleased to quote you our prices. Send us your name and address and receive our next season's catalog and price list when same is published.

AUGUST LOTZ COMPANY, -:- BOYD, WISCONSIN

PREPAREDNESS

"The state of being in readiness"

(Webster)

Are **you** ready for next season? If you are, all well and good. If not, take the advice of "one who knows," and send in your order now.

Don't you enjoy the feeling that everything is snug for the winter, and all supplies ready for spring?

Nothing to worry about during the long winter evenings as you sit with pipe and book in front of the fire.

Think over the past season, what a fine one it has been, and how much better next season will be if you are prepared for it.

Do your part; the bees will do theirs.

We allow 6% early order discount for this month.

Write for our catalog.

F. A. Salisbury
1631 West Genesee Street
Syracuse, N. Y.

BEE SUPPLIES



The largest and oldest Bee Supply manufacturer in Minnesota can offer you bee ware that will keep that "satisfied smile" on your face. Excellent quotations given on frames, spacing or unspacing. Send for my 1920 Catalog and Price List. Think it over and in thinking be wise and save money by placing your orders before the rush is on. *Will Take Beeswax in Trade at Highest Market Prices.*

CHARLES MONDENG
1461 Newton Ave., N. Minneapolis, Minn.

Beeswax Wanted

In big and small shipments, to keep Buck's Weed-process foundation factory going. We have greatly increased the capacity of our plant for 1920. We are paying higher prices than ever for wax. We work wax for cash or on shares.

Root's Bee-supplies

Big stock, wholesale and retail. - Big catalog free.

Carl F. Buck

The Comb-foundation Specialist
Augusta, Kansas

Established 1899

QUEENS

QUEENS

PACKAGE BEES

ORDERS are coming in daily for 1921 SHIPPING

My FREE circular gives prices, etc. in detail. Safe delivery GUARANTEED. We ship thousands of pounds all over the U. S. A. and Canada.

Our Fall flow is very favorable for Queen-rearing up to about Christmas. So we can furnish you queens the balance of this year at the following prices:

	1	6	12	50	100
Untested Queens	\$1.50	\$ 7.50	\$13.50	\$ 48.00	\$ 95.00
Select Untested .	1.65	8.25	14.85	52.80	104.50
Tested Queen ...	2.50	13.50	27.00	110.00	
Select Tested....	3.00	16.30			

NUECES COUNTY APIARIES, CALALLEN, TEXAS

E. B. AULT, Prop.

COUNCIL BLUFFS AND THE NEW AIRCO

Our first year in Council Bluffs under the Root name has been a very encouraging one. We believe that Western Beekeepers appreciate the fact that a manufacturing center has been placed in Council Bluffs for their convenience. Our plans are to make the equipment here absolutely complete in every way, and to be able to serve the Beekeepers of the Great West even more completely and promptly, in each and every detail of their needs.

And to do this it is necessary, first of all, to install AIRCO FOUNDATION mills. We plan to turn out that famous and supreme foundation on our own mills within a few weeks. Send us your combs, or your rendered wax, and we will be glad to work it into AIRCO on the standard trade basis, or remit cash, if you prefer. We are paying, both in trade and cash, top prices, and offering, too, premiums for extra grade wax. Let us send you shipping tags, and quote on your season's need in foundation. For we are positive we can save you money.

For, first of all, we can ship promptly, and over any one of nine trunk lines, to your very door. And how often in honey production is time money!

But, most important of all, the new AIRCO itself is supreme quality, and quality in foundation pays mighty big dividends.



AIRCO—AND THE A. I. ROOT COMPANY
Council Bluffs, Iowa.

A LEADER IN AMERICAN BEEKEEPING



Geo. S. Demuth.

Mr. Geo. S. Demuth, for the last nine years the assistant of Dr. E. F. Phillips in the Department of Bee Culture Investigations at Washington, D. C., and one of the most favorably known beekeepers and beekeeping authorities in America, will become the active editor of *Gleanings in Bee Culture* the present month, associating himself with E. R. and A. I. Root in editorial work.

Mr. Demuth will bring to his new position very unusual qualifications, not only as a practical beekeeper in his own apiary but as a student and scientist of beekeeping. Few leaders in apiculture have ever had the degree of confidence of the beekeepers everywhere that Mr. Demuth has. It is hardly too much to say that beekeepers generally agree to the proposition that "when Demuth says it's so, it's so."

A Step in Advance

Mr. Demuth's coming to *Gleanings in Bee Culture* is not only for the purpose of making it a still better bee journal and still more useful to American beekeepers, but also to put him in position to serve the American beekeeping public in all our literature. He will have a part in the revision of the A B C and X Y Z of Bee Culture from time to time; in the preparation of revisions of standard beekeeping books, and in the editing of new beekeeping books now planned. All of his great store of beekeeping knowledge will be placed at the service of American beekeepers in whatever we may publish. Just as he has so conscientiously and ably served at Washington the American beekeepers, he is now going to serve them in the capacity of editor of our *Gleanings in Bee Culture* and our beekeeping books of all kinds.

George S. Demuth needs no introduction to American beekeepers. It is only to introduce him in his new capacity as one of our staff that his name and likeness appear on this page at this time.

THE A. I. ROOT COMPANY

West Side Station

Medina, Ohio

By E. R. Root, Vice President and Editor of Gleanings in Bee Culture.

KNOTS DON'T COUNT



BEWARE is the motto for Lewis workmen.
It demands first grade pine lumber.
Rigid lumber choice begins at the cars.
It continues until the goods are shipped.
That is the duty we owe to every beekeeper.
Look for this trademark on quality goods.
With us it's BEWARE. With you -- "BEEWARE."

Look
For



This
Mark

Look for your distributor's name on the front cover of the "Beeaware" catalog.
If you have no catalog, send for one. It's free. We want you to succeed.

G. B. LEWIS COMPANY,

Makers of Lewis "Beeaware."
Nationally Distributed.

WATERTOWN

WISCONSIN